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ICONES PLEUROTHALLIDINARUM

XVII

SYSTEMATICS OF SUBGEN. PLEUROTHALLIS SECT. ABORTIVAE SECT. TRUNCATAE SECT. PLEUROTHALLIS SUBSECT. ACRONIAE SUBSECT. PLEUROTHALLIS SUBGEN. DRACONTIA SUBGEN. UNCIFERIA

ADDENDA TO DRACULA, LEPANTHES, MASDEVALLIA PORROGLOSSUM AND SCAPHOSEPALUM

(ORCHIDACEAE)

Missouri Botanical Garden vol. 72

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SUBGEN. DRACONTIA

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ADDENDA TO DRACULA, LEPANTHES, MASDEVALLIA PORROGLOSSUM AND SCAPHOSEPALUM

Carlyle A. Luer

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Pleurothallis alvaroi Luer & Escobar, a native of Antioquia, Colombia, cultivated at Colomborquídeas, El Retiro, Colombia, photographed by Rodrigo Escobar.

SYSTEMATICS OF *PLEUROTHALLIS* SECTIONS *ABORTIVAE*, *TRUNCATAE* AND *PLEUROTHALLIS* SUBSECTIONS *ACRONIAE* AND *AMPHYGIAE* (ORCHIDACEAE)

ABSTRACT

Sections *Abortivae* Luer and *Truncatae* Luer and subsections *Acroniae* Luer and *Pleurothallis* of subgen. *Pleurothallis* R.Br. sect. *Pleurothallis* are described. A key to the sections and subsections of *Pleurothallis* and keys to the species of the subsections are given. Each species is described and illustrated with a black and white drawing.

Taxa et stat. nov.:
Pleurothallis subsect. *Antenniferae* Luer, subsect. nov.
Pleurothallis subsect. *Longiracemosae* Luer, subsect. nov.
Pleurothallis ser. *Acroniae* (Presl) Luer, stat. nov.
Pleurothallis ser. *Amphigyae* Luer, stat. nov.
Pleurothallis cleistogama Luer, sp. nov.
Pleurothallis cunabularis Luer, sp. nov.
Pleurothallis pseudopogon Luer, sp. nov.
Pleurothallis quaternaria Luer, sp. nov.
Pleurothallis ramosii Luer, sp. nov.
Pleurothallis sagittilabia Luer, sp. nov.
Pleurothallis tetrachaeta Luer, sp. nov.

The genus *Pleurothallis* was proposed by Robert Brown in 1813 and based on a collection from Martinique described by Jacquin in 1760 as *Epidendrum ruscifolium*. Today, 2045 epithets are recorded as having been attributed to the genus. Possibly as many as 1500 are valid. As presently conceived, the genus is divided into 29 subgenera (Luer, 1986).

Subgenus *Pleurothallis* is characterized by a semiterete, wingless and toothless column with an apical, unhooded anther and an apical or subapical stigma. Among the other subgenera with a similar column are: *Aenigma (Icones Pleurothallidinarum XI)*, *Ancipitia (Icones Pleurothallidinarum VI)*, *Crocodeilanthe (Icones Pleurothallidinarum XVI)*, *Rhynchopera (Icones Pleurothallidinarum XVI)* and *Scopula (Icones Pleurothallidinarum VI)*, as well as several small subgenera not yet treated in an Icones *Pleurothallidinarum* since *Icones Pleurothallidinarum III*.

Subgenus *Pleurothallis* is further defined by well-developed ramicauls that are not sharply compressed, an essentially free dorsal sepal, lateral sepals that are completely connate into a synsepal, and a lip that is attached simply to an abbreviated or absent column-foot. Three sections, *Pleurothallis* and two unispecific sections, *Abortivae* and *Truncatae*, are recognized (Luer, 1988).

Section *Pleurothallis* is presently subdivided into six subsections: *Acroniae*, *Antenniferae*, *Longiracemosae*, *Macrophyllae-Fasciculatae*, *Macrophyllae-Racemosae* and *Pleurothallis*. All are closely related, sometimes with overlapping boundaries and intermediate species. The differences rely only on key characters. Each ambiguous species is identified and explained.

KEY TO THE SECTIONS AND SUBSECTIONS OF SUBGENUS *PLEUROTHALLIS*

1 Leaf petiolate 2
1' Leaf sessile 3

2 Inflorescence shorter than the leaf; synsepal not cucullate, petals narrow, glabrous; lip without basal lobes ..... subsect. *Pleurothallis*
2' Inflorescence shorter or longer than the leaf; synsepal cucullate, petals glabrous or denticulate; lip rounded with retrorse basal lobes ..... subsect. *Macrophyllae-Racemosae*

3 Inflorescence single-flowered 4
3' Inflorescence racemose 6

4 Lip vestigial beneath a much larger, terete column ..... sect. *Abortivae*
4' Lip well-developed 5

5 Flowers usually resupinate, usually long-pedicellate; petals prominent, often descending and sigmoid; lip triangular and acute with the basal angles sometimes lobe-like; column semiterete ..... subsect. *Acroniae* series *Amphygiae*
5' Flowers resupinate or non-resupinate, usually short-pedicellate; petals less prominent, usually oblong; lip thick, entire, usually obtuse; column distinctly shorter and broader ..... subsect. *Macrophyllae-Fasciculatae*

6 Perianth spherical; lip spherical with involute sides, inflexibly fixed to the base column ..... sect. *Truncatae*
6' Flowers not as above 7

7 Flowers resupinate, usually long-pedicellate; synsepal shallowly concave; petals prominent, often descending, sigmoid, ciliate, fringed or pubescent; lip triangular and acute with the basal angles sometimes lobe-like ..... subsect. *Acroniae* series *Acroniae*
7' Flowers usually non-resupinate, short-pedicellate; synsepal concave; petals not as above; lip variously lobed 8

8 Raceme usually pendent; synsepal cucullate; petals broad or dilated, occasionally denticulate; lip round with retrorse, basal lobes, the disc usually prominently bicallous ..... subsect. *Macrophyllae-Racemosae*
8' Raceme usually erect; synsepal concave or cucullate; petals narrowly linear to oblong, glabrous, entire; lip with or without prominent lateral or basal lobes, the disc not prominently bicallous 9

9 Lip with distinct or prolonged lateral lobes; petals commonly linear ..... subsect. *Antenniferae*
9' Lip without distinct or prolonged lateral lobes; petals commonly oblong ..... subsect. *Longiracemosae*

SECTION *ABORTIVAE*

Pleurothallis subgen. **Pleurothallis** sect. **Abortivae** Luer, Monogr. Syst. Bot. 20: 57, 1986.

Type: *Pleurothallis abortiva* Luer.

Ety.: From the Latin *abortivus*, "abortive," referring to the absent column-foot.

The solitary species segregated into this section is superficially similar to the single-flowered species of series *Amphygiae* of subsection *Acroniae*. It is distinguished from all other species of the subgenus by the small, vestigial lip and large, terete, footless column.

Pleurothallis abortiva Luer, Phytologia 47: 72, 1980.

Ety.: From the Latin *abortivus*, "abortive," referring to the absent column-foot.

Plant small, epiphytic, densely caespitose; roots slender. Ramicauls slender, erect, 7-11 cm long, with a close tubular sheath below the middle and 2-3 others at the base. **Leaf** erect, coriaceous, narrowly linear-ovate, acute, 7-9 cm long, 0.7-1 cm wide, cuneate below at the sessile base. **Inflorescence** a fascicle of successive, single flowers, borne by slender peduncles 4-5 mm long, from a spathe 3 mm long at the base of the leaf; floral bracts tubular, 2.5 mm long; pedicels 2 mm long; ovary 2 mm long; **sepals** yellow-green, lightly suffused with purple, minutely pubescent within below the middle, the dorsal sepal narrowly triangular, cymbiform, acute, concave, subcarinate, 6 mm long, 1.5 mm wide, 3-veined, the lateral sepals connate into a narrowly ovate, acute synsepal, convex below the middle, concave above the middle, 6 mm long, 2.5 mm wide, 4-veined; **petals** thick, narrowly linear-triangular, acute, glabrous, 6 mm long, 0.6 mm wide, 3-veined; **lip** membranous, obovate, obtuse, glabrous, 1.6 mm long, 0.5 mm wide, appressed to the undersurface of the column, attached to the base of the column; **column** stout, cylindrical, 2.5 mm long, the anther and stigma apical, the base footless.

COLOMBIA: **Nariño**: epiphytic in cloud forest at La Planada, above Ricaurte, alt. 1950 m, 2 Nov. 1979, *C. Luer, J. Luer, A. Hirtz & K. Walter 4547* (Holotype: SEL).

A member of subgenus *Pleurothallis* because of the connate lateral sepals and a terete column with an apical, unhooded anther and stigma, this species is treated in a unispecific section. It is superficially similar to those of series *Amphygiae* of subsection *Acroniae* with a fascicle of single flowers at the base of a narrow leaf. It differs from all other species in the subgenus by the very small and membranous, vestigial lip that clings to the undersurface of the much larger, cylindrical column and simply attached to the base. Resembling many species of *Lepanthes*, the lip is attached to the base of a terete column without a foot.

Pleurothallis abortiva Luer.....Fig. 1.

SECTION *TRUNCATAE*

Pleurothallis subgen. **Pleurothallis** sect. **Truncatae** Luer, Monogr. Syst. Bot. 20: 67, 1986.

Type: *Pleurothallis truncata* Lindl.

Ety.: From the Latin *truncatus*, "truncate," referring to the shape of the lip when expanded.

The solitary species segregated into this section is superficially similar to the numerous species of subsection *Longiracemosae*. It is distinguished from all other species of the subgenus by the orbicular flower and an orbicular lip within, which is formed by round, involute sides. The base of the lip is solidly united to the base of a terete column with an apical anther and stigma.

Pleurothallis truncata Lindl., Comp. Bot. Mag. 2: 355, 1836.

Ety.: From the Latin *truncatus*, "truncate," probably referring to the lip.

Syn.: *Humboldtia truncata* (Lindl.) Kuntze, Rev. Gen. Pl. 668, 1891.

Syn.: *Pleurothallis corazonica* Schltr., Repert. Spec. Nov. Regni Veg. 14: 128, 1915.

Ety.: Named for Volcán Corazón where the species was collected by Sodiro.

Plant medium in size to large, epiphytic to lithophytic, caespitose, roots slender. Ramicauls erect to suberect, often horizontal, slender, 10-45 cm long, with a close, tubular sheath below the middle and another 1 or 2 at the base. **Leaf** erect to suberect, coriaceous, elliptical-ovate, acute, slightly acuminate, 6-16 cm long, 2-4 cm wide, the base rounded to shallowly cordate, sessile. **Inflorescence** 1-3 distichous, congested, simultaneously many-flowered racemes of small, suborbicular, bright orange flowers, 5-10 cm long including the peduncle 1-2 cm long, lying upon the leaf, from a spathe ca. 1 cm long at the base of leaf; floral bracts 2-2.5 mm long; pedicels 1.5 mm long; ovary 1.25 mm long; **sepals** fleshy, glabrous, the dorsal sepal ovate, obtuse, concave, 3 mm long, 2 mm wide, 3-veined, the lateral sepals connate into a deeply concave, ovoid, obtuse synsepal, 3 mm long, 3 mm wide unexpanded; **petals** thick, broadly obovate, concave, obtuse, 1.75 mm long, 1.25 mm wide, 1-veined; **lip** transversely 3-lobed, 1.75 mm long, 1.75 mm wide unexpanded, 3 mm wide expanded, the apex transversely obtuse, shallowly concave, the sides (lateral lobes) broadly rounded, incurved to meet in the midline to form a globose tube, the base truncate, inflexibly fixed to a rudimentary column-foot; **column** stout, semiterete, 1.25 mm long, the anther and stigma apical.

ECUADOR: **Pichincha**: Andes of Quito, *W. Jameson s.n.* (Holotype: K); "Quito," 1848, *W. Jameson s.n.* (K); Andes of Quito, alt. 8,000 ft., 21 Jan. 1856, *W. Jameson s.n.* (AMES); "Quito," *W. Jameson 679* (AMES, BR); Calacalí, alt. 2800-3000 m, 28 Nov. 1880, *F.C. Lehmann 332* (W); lithophytic and epiphytic, Mt. Corazón, Sept. 1892, *A. Sodiro 6* (lectotype of *P. corazonica*: BR); between San Juán and Chiriboga, alt. 2700 m, 20 Mar. 1979, *B. Løjtnant & U. Molau 11257* (AAU, GB); same area, alt. 2500 m, 27 Jan. 1982, *G. Harling et al. 19905* (GB); between Tandapi and Aloag, alt. 2650 m, 7 Feb. 1985, *U. Molau & L. Öhman 1152* (AAU, GB). **Bolívar**: west of Guaranda, alt. 2000 m, 26 Mar. 1984, *C. Luer, S. Dalström et al. 9731* (MO); at pass north of Chillanes, alt. 2650 m, 25 Mar. 1984, *C. Luer, S. Dalström et al. 9716* (MO). **Chimborazo**: below Pallatanga, alt. 2250 m, *C. Luer, J. Luer, A. Hirtz & W. Flores 10659* (MO). **El Oro**: above Zaruma, alt. 1800 m, 1 Feb. 1987, *C. Luer, J. Luer & A. Hirtz 12569* (MO). **Loja**: northeast of Tambillo, on trail to Manú, alt. 2600-2750 m, 21 Feb. 1988, *U. Molau & B. Eriksen 3143* (GB).

This species, well-known to botanists and hobbyists alike for the tiny string of beebee-sized, bright orange flowers, is relatively frequent at high altitudes of central Ecuador. It is characterized by a more or less horizontal, ovate leaf with a longer, slender ramicaul. Lindley thought that the raceme stood erect because that is the way his specimen was mounted. In life, the raceme lies upon the dorsum of the leaf. The flowers are spherical with the synsepal deeply concave. The lip within is also spherical with broadly rounded sides incurved to meet in the midline. The lip is open at the tip, and with the bright orange color, it is no doubt hummingbird-pollinated. Perhaps the solid unification of the lip to the base of the column prevents detachment during a more boisterous mode of pollination.

Pleurothallis truncata Lindl. .....Fig. 2.

Treatments of *Pleurothallis* subsections *Acroniae* and *Pleurothallis* follow. The remaining four subsections will be treated in future publications of *Icones Pleurothallidinarum*. Subsections *Antenniferae* and *Longiracemosae* are described here:

Pleurothallis sect. **Pleurothallis** subsect. **Antenniferae** Luer, subsect. nov.

Type: *Pleurothallis antennifera* Lindl., Folia Orch. *Pleurothallis* 30, 1859.

Ety.: From the Latin *antennifer*, "antenna-bearing," referring to the narrow petals.

Syn.: *Pleurothallis* series *Longiracemosae* Luer, Monogr. Syst. Bot. 20: 64, 1986, in part.

Racemus elongatus, pedicilli breves, petala vulgo anguste linearia et labellum lobatum.

About 30 species constitute this subsection.

Pleurothallis sect. **Pleurothallis** subsect. **Longiracemosae** Luer, subsect. nov.

Type: *Pleurothallis litotes* Luer, Selbyana 5: 170, 1979.

Ety.: From the Latin *longiracemosus*, "with long racemes," referring to the inflorescence.

Syn.: *Pleurothallis* series *Longiracemosae* Luer, Monogr. Syst. Bot. 20: 64, 1986, in part.

Racemus elongatus, pedicilli breves, petala oblonga vel linearia et labellum non lobatum.

About 20 species constitute this subsection.

SUBSECTION *ACRONIAE*

Pleurothallis subgen. **Pleurothallis** sect. **Pleurothallis** subsect. **Acroniae** (Presl) Luer, Monogr. Syst. Bot. 20: 61, 1986.

Bas.: *Acronia* Presl, Rel. Haenk. 1: 103, 1827.

Type: *Acronia phalangifera* Presl, Rel. Haenk. 1: 104, 1827 = *Pleurothallis phalangifera* (Presl) Rchb.f.

Ety.: From the Greek *acron*, "the summit, or top," without an obvious reference, possibly referring to the long, apical inflorescence, or the apical anther.

Plants perennial, small to large in size, normally epiphytic to terrestrial, caespitose; roots slender. Ramicauls erect to suberect, terete, elongate, non-pseudobulbous, unifoliate, with a closely fitting, tubular sheath below the middle and 1-3 other sheaths at the base. **Leaf** erect, suberect or spreading, coriaceous, smooth, narrowly or broadly elliptical to ovate, the apex acute to subacute, shallowly notched with a mucro in the sinus, the base sessile, variously cuneate to rounded, subcordate or cordate. **Inflorescence** racemose or single-flowered, usually long-pedicellate, the flowers resupinate, variously colored, borne by a slender peduncle that emerges from the ramicaul at the base of the leaf with an inconspicuous, reclining spathe; floral bracts thin, infundibular or tubular, acute; pedicels slender, usually much exceeding the floral bract; ovary smooth; trivalvate; **sepals** glabrous, membranous, acute, subacute or obtuse, to acuminate and sometimes caudate, the dorsal sepal free from the lateral sepals, the lateral sepals completely connate into a flat or concave, but not deeply cucullate, synsepal; **petals** usually conspicuous, often descending and sigmoid, broadly to narrowly oblong, acute to acuminate, usually ciliate, denticulate or fringed; **lip** triangular-trilobed, the lobes basal and more or less erect, the base deflexed, often into a broad claw, flexibly or inflexibly attached to the thickened base of the column or column-foot; **column** terete, non-winged, the anther apical and the stigma apical or subapical, pollinia 2, obovoid, with a microscopic viscidium, the base of the column thickened with the apex of the column.

Subsection *Acroniae* is divided into two series. Series *Acroniae* consists of those species with a racemose inflorescence. Series *Amphigyae* consists of the species with a single-flowered inflorescence.

Acroniae series **Acroniae** Luer. (Lindleyana 3: 134, 1988)

Type: *Pleurothallis phalangifera* (Presl) Rchb.f.

This series is characterized by a racemose inflorescence. Some species assigned here have affinities with subsection *Longiracemosae*. They are distinguished from the latter by usually long-pedicellate flowers; usually broader, ciliate, denticulate or pubescent petals; and a lip without prolonged lateral lobes.

Acroniae series **Amphigyae** Luer, stat. nov.

Bas.: Series *Amphigyae* Luer, *nom. nudum*, Lindleyana 3: 134, 1988.

Type: *Pleurothallis amphigya* Luer & Escobar.

Inflorescentia uniflora longipedicellata.

This series is characterized by a single-flowered, long-pedunculate inflorescence. Some species assigned here have affinities with subsection *Macrophyllae-Fasciculatae*, which is best distinguished by a short, stout column usually broader than long, instead of terete and usually longer than wide. One species, *P. archicolonae*, occasionally bears a second flower in a loose, two-flowered raceme.

The first species of subsection *Acroniae* was described as *Acronia phalangifera* by Presl in 1827 in a unispecific genus. No other species was ever attributed to the genus. Reichenbach transferred the solitary species to *Pleurothallis* in 1862. In the meantime, Lindley had described this same species as *P. mathewsii* in 1836 from an Ecuadorian collection by Matthews, as *P. bogotensis* in 1846 from a Colombian collection by Linden, and as *P. decurva* in 1859 from an Ecuadorian collection by Jameson. Lindley treated *P. phalangifera* in section *Macrophyllae-Racemosae*. The only other species attributable to subsection *Acroniae* described before the twentieth century are *P. luctuosa* and *P. supervacanea* by Reichenbach. In *Systematics of Pleurothallis* (Luer, 1986), 24 species closely related to the above two were brought together in subsection *Acroniae* of section *Pleurothallis*.

Subsection *Acroniae*, now more narrowly defined with 46 species, is characterized by a caespitose habit with well-developed ramicauls that are usually longer than the leaf. The inflorescence is terminal at the base of the leaf, either racemose or single-flowered, the basis upon which two series are defined. Racemose species are usually **long-pedicellate**; single-flowered species are usually **long-pedunculate**. The flowers are basically similar and usually resupinate. As in the other subsections, the dorsal sepal is free from the laterals, and the lateral sepals are always completely connate into a synsepal more or less similar to the dorsal sepal. The petals are prominent, membranous and broad (with exceptions), frequently descending and sigmoid in outline, and often ciliate, denticulate, fringed or pubescent. With one exception (*P. nox-media*), the lip is triangular or trilobed with the lobes (the lateral or basal angles) more or less incurved or erect, not prolonged into lateral lobes. The apex is acute, or apiculate if obtuse. A variously developed glenion (a more or less circular structure above the base of the lip) is usually present, but an intricate callus is only sometimes present on the disc. The base is variously deflexed below the lateral angles and hinged to the thickened base of an obsolescent column-foot. The column is semiterete, usually short, and the anther and stigma are apical with the stigma transverse or bilobed. The pair of ovoid pollinia possesses a minute, granular viscidium.

Subsection *Pleurothallis* is distinguished from subsection *Acroniae* by short racemes of flowers with spreading petals that are narrow and glabrous, and often thickened, especially toward the apex.

The great, single-flowered subsection *Macrophyllae-Fasciculatae* is distinguished from series *Amphygiae* of subsection *Acroniae* by peduncles usually hidden within the spathe, and usually short pedicels; entire, fringed or pubescent petals that are not sigmoid; a thick, obtuse lip that is oblong or transverse; and a shorter, broader column with an apical anther and stigma that is almost always bilobed. Distinctions between the two taxa are not always clear, which leaves positive placement of borderline species a problem.

Subsection *Macrophyllae-Racemosae* is distinguished by non-resupinate flowers in racemes that are commonly decurved or pendent; a cucullate synsepal; large, entire petals (with few exceptions) that are often thickened; and a more or less round lip with retrorse, basal lobes and a pair of calli on the disc.

Subsections *Antenniferae* and *Longiracemosae*, are characterized by more or less non-resupinate, short-pedicellate flowers in usually erect racemes longer than the leaf, and entire, glabrous, spreading petals. Subsection *Antenniferae* is defined by the lip with distinct or prolonged lateral lobes, subsection *Longiracemosae*, by the lip without lateral lobes.

BINOMIALS PUBLISHED IN *PLEUROTHALLIS* REFERABLE TO SUBSECTION *ACRONIAE*

Series *Acroniae*

Pleurothallis alvaroi Luer & Escobar ..... Fig. 3.
Pleurothallis apoxys Luer = **P. supervacanea**
Pleurothallis bogotensis Lindl.= **P. phalangifera**
Pleurothallis cooperi Schltr. = **P. dentipetala**
Pleurothallis cucullata Ames = **P. rowleei**
Pleurothallis dentipetala Rolfe ex Ames. ..... Fig. 4., Fig. 5.
Pleurothallis dukei Luer ..... Fig. 6.
Pleurothallis gomezii Luer & Escobar ..... Fig. 7.
Pleurothallis hammellii Luer ..... Fig. 8.
Pleurothallis imitor Luer ..... Fig. 9.
Pleurothallis ineziae Schltr. = **P. phalangifera**
Pleurothallis languida Luer ..... Fig. 10.
Pleurothallis longipedicellata Ames & C.Schweinf. ..... Fig. 11.
Pleurothallis lopezii Luer & Escobar ..... Fig. 12.
Pleurothallis luctuosa Rchb.f. ..... Fig. 13.
Pleurothallis mathewsii Lindl. = **P. phalangifera**
Pleurothallis nasuta Schltr. = **P. phalangifera**
Pleurothallis nox-media Luer & Escobar ..... Fig. 14.
Pleurothallis pallida Luer ..... Fig. 15.
Pleurothallis phalangifera (Presl) Rchb.f. ..... Fig. 16.
Pleurothallis polysticta Luer ..... Fig. 17.
Pleurothallis rhodocardia Garay = **P. rowleei**
Pleurothallis rowleei Ames ..... Fig. 18.
Pleurothallis sanluisii Foldats ..... Fig. 19.
Pleurothallis schnitteri Schltr. = **P. phalangifera**
Pleurothallis stalkyi Luer = **P. sanluisii**
Pleurothallis stelidiformis Schltr. = **P. dentipetala**
Pleurothallis stevensii Luer = **P. dentipetala**
Pleurothallis stricta Luer & Escobar ..... Fig. 20.
Pleurothallis supervacanea Rchb.f. ..... Fig. 21.
Pleurothallis tryssa Luer ..... Fig. 22.
Pleurothallis vieirae Luer & Escobar ..... Fig. 23.
Pleurothallis volcanica Luer ..... Fig. 24.
Pleurothallis werneri Schltr. = **P. phalangifera**

Series *Amphygiae*

Pleurothallis allenii L.O.Williams ..... Fig. 25.
Pleurothallis amphigya Luer & Escobar ..... Fig. 26., Fig. 27.
Pleurothallis annectens Luer ..... Fig. 28.
Pleurothallis arachnion Luer = **P. quadricaudata**
Pleurothallis archicolonae Luer ..... Fig. 29.
Pleurothallis bucranon Luer & Hirtz ..... Fig. 30.
Pleurothallis cauda-phocae Luer & Hirtz ..... Fig. 31.
Pleurothallis forceps-cancri Luer & Escobar ..... Fig. 32.
Pleurothallis fugax Luer & Escobar ..... Fig. 33.
Pleurothallis glochis Luer & Escobar ..... Fig. 34.

Pleurothallis gracilipedunculata Foldats.....Fig. 35.
Pleurothallis habenula Luer & Escobar.....Fig. 36.
Pleurothallis lobata Luer.....Fig. 37.
Pleurothallis orecta Luer & Escobar.....Fig. 38.
Pleurothallis pseudopogon Luer & Hirtz.....Fig. 39.
Pleurothallis quadricaudata Schltr. .....Fig. 40
Pleurothallis quaternaria Luer .....Fig. 41.
Pleurothallis ramosii Luer.....Fig. 42.
Pleurothallis sagittilabia Luer.....Fig. 43.
Pleurothallis simulans L.O.Williams .....Fig. 44.
Pleurothallis sobrina Luer & Hirtz.....Fig. 45.
Pleurothallis somnolenta Luer .....Fig. 46.
Pleurothallis stevensonii Luer .....Fig. 47.
Pleurothallis tetrachaeta Luer & Hirtz .....Fig. 48.
Pleurothallis tipuloides Luer.....Fig. 49.
Pleurothallis wigginsii C.Schweinf. .....Fig. 50.

KEY TO THE SPECIES OF SUBSECTION *ACRONIA*

1 Inflorescence racemose 2
1' Inflorescence single-flowered 22

Series Acroniae

2 Raceme successively 2-flowered.....3
2' Raceme simultaneously few- to many-flowered 4

3 Lip with low, obtuse, basal angles flanking the column.....*P. imitor*
(similar to subsect. *Macrophyllae-Fasciculatae*, but 2-flowered)
3' Lip with large, rounded, basal angles embracing the column.....*P. dukei*
(similar to series *Amphygiae*, but 2-flowered)

4 Petals smooth (similar to subsect. *Longiracemosae*).....5
4' Petals variously denticulate.....9

5' Pedicels about as long as the floral bract 6
5 Pedicels much longer than the floral bract 7

6 Raceme longer than the leaf; petals narrow.....*P. tryssa*
6' Raceme shorter than the leaf; petals large and broad.....*P. hammellii*

7 Sepals spotted; lip obtuse, apiculate.....*P. polysticta*
7' Sepals unspotted; lip with apex acute 8

8 Petals small, outstretched; lip 3-lobed with large, basal lobes.....*P. volcanica*
8' Petals large, decurved; lip triangular with obtuse, basal angles.....*P. vieirae*

9 Lip thick, oblong, convex, round at the apex.....*P. nox-media*
(similar to subgenus *Acianthera*)
9' Lip triangular, or obtusely angled 10

10 Lip with the margins lacerate .....*P. lopezii*
10' Lip with the margins entire 11

11 Lip oblong-ovate, with a pair of calli on lower third.....12
11' Lip triangular, or obtusely angled near, below the middle, or at the base.....13

12 Sepals and petals narrowly acuminate.....*P. supervacanea*
12' Sepals and petals ovate, acute.....*P. alvaroi*

13 Petals curved upward from synsepal, denticulate only on basal fourth.....
.....*P. languida*
13' Petals not curved upward from synsepal, most of margins denticulate.....14

14 Lip with short, acute, apical lobe, disc with a conical callus at the base.....
.....*P. sanluisii*
14' Lip not with a basal, conical callus.....15

15 Lip broadly ovate, obtuse, apiculate.....*P. pallida*
15' Lip more or less triangular with lobe-like basal angles.....16

16 Sepals broadly obtuse.....17
16' Sepals acute or acuminate.....18

17 Pedicels much longer than the floral bract.....*P. longipedicellata*
17' Pedicels about as long as the floral bract.....*P. dentipetala*

18 Leaves less than 1 cm wide.....*P. luctuosa*
18' Leaves more than 2 cm wide.....19

19 Sepals more than 25 mm long.....*P. phalangifera*
19' Sepals 10-15 mm long.....20

20 Leaves 15-30 cm long.....*P. gomezii*
20' Leaves 5-12 cm long.....21

21 Lip triangular, acute, with rounded basal lobes.....*P. stricta*
21' Lip triangular-trilobed, with narrow, acute apex.....*P. rowleei*

Series Amphygiae

22 Petals smooth (similar to subsect. *Longiracemosae*).....23
22' Petals variously denticulate.....27

23 Lip with distinct, large, basal lobes and a small, apical lobe.....24
23' Lip not distinctly 3-lobed.....26

24 Lip with disc convex, anterior lobe denticulate, apiculate.....*P. somnolenta*
24' Lip with a callus above the base.....25

25 Lip with the anterior lobe ovate, acute.....*P. ramosii*
25' Lip with the anterior lobe oblong, recurved.....*P. lobata*

26 Sepals acuminate; lip obtuse with acuminate apiculum.....*P. stevensonii*
26' Sepals ovate, not acuminate; lip triangular.....*P. orecta*

27 Leaves narrowly ovate, narrowly cuneate at the base.....28
27' Leaves ovate, broadly cuneate, round or cordate at the base.....32

28 Lip triangular with acute apex and basal angles, disc with a curved callus above the base (similar to subsect. *Macrophyllae-Fasciculatae*).....*P. sagittilabia*
28' Lip more or less triangular with broad, basal lobes.....29

29 Lip with the apex spiculate, fimbriate 30
29' Lip neither spiculate nor fimbriate 31

30 Lip uppermost, obtuse with the margin thick, apiculate..... *P. similans*
30' Lip lowermost, with a bilobed callus, the apex acute..... *P. allenii*

31 Lip transverse, apex broadly obtuse, apiculate, disc with a conical callus above the base..... *P. fugax*
31' Lip subtrilobed subacute, disc without a callus..... *P. archicolonae*

32 Sepals long-acuminate, attenuate, with tails ca. 3 times longer than the blade...33
32' Sepals not with tails ca. 3 times longer than the blade..... 36

33 Petals sigmoid, acuminate, not long-attenuate..... *P. amphygia*
33' Petals long-attenuate, as the sepals 34

34 Lip with acute, antrorse to uncinate, basal lobes, glenion large ..... *P. quadricaudata*
34' Lip with obtuse basal lobes or angles..... 35

35 Lip 5 mm long, basal lobes erect, denticulate..... *P. tipuloides*
35' Lip 2 mm long, with low, rounded, basal angles..... *P. tetrachaeta*

36 Petals with apices narrowly acuminate..... 37
36' Petals with apices not narrowly acuminate 38

37 Lip with a prominent, bilobed callus..... *P. cauda-phocae*
37' Lip without a bilobed callus..... *P. forceps-cancri*

38 Petals large, sigmoid, decurved 39
38' Petals not large, sigmoid, decurved..... 42

39 Lip with rounded basal lobes, larger than the apical lobe..... *P. annectens*
39' Lip not with large, rounded basal lobes 40

40 Lip triangular with narrowly rounded basal angles..... *P. quaternaria*
40' Lip with acute, antrorse basal lobes 41

41 Lip with basal lobes broad, antrorse, acute..... *P. sobrina*
41' Lip with basal lobes narrowly uncinate..... *P. bucranon*

42 Petals broadly triangular-ovate 43
42' Petals narrowly ovate 44

43 Lip acutely deflexed above a narrow claw, with basal lobes narrowly rounded ..... *P. habenula*
43' Lip not deflexed above a short claw, with basal lobes broadly rounded ..... *P. glochis*

44 Lip with large, erect, rounded basal lobes above the claw ..... *P. gracilipedunculata*
44' Lip with short, rounded basal lobes above the claw..... 45

45 Lip acute, deflexed above the claw with retrorse lobes ..... *P. wigginsii*
45' Lip obtuse, fringed, deflexed above the claw without lobes..... *P. pseudopogon*

SERIES *ACRONIAE*

Pleurothallis alvaroi Luer & Escobar, Orquideología 14: 122, 1981.

Ety.: Named in honor of Sr. Alvaro Mejía of Medellín, Colombia, who had cultivated this species.

Plant medium in size to large, epiphytic, caespitose or shortly repent, the rhizome stout, up to 1 cm between ramicauls; roots slender. Ramicauls stout, erect, 10-18 cm long, enclosed below the middle by a tubular sheath, and 2-3 sheaths at the base. **Leaf** erect, coriaceous, ovate, acute, lightly acuminate, 12-20 cm long, 4-5.5 cm wide, the base sessile, broadly cuneate. **Inflorescence** a loose, distichous, simultaneously several-flowered raceme 14-20 cm long including the peduncle 7-9 cm long, subtended by a reclining spathe 2-2.5 cm long; floral bracts thin, infundibular, 5-6 cm long; pedicels 10-13 cm long; ovary 4 mm long; **sepals** greenish white to purple or purple-brown, membranous, glabrous, the dorsal sepal ovate, narrowly obtuse, 13-15 mm long, 6 mm wide, 3-veined, the lateral sepals connate into an ovate, obtuse, cymbiform lamina, 12-15 mm long, 8 mm wide unexpanded, 4-(6-)veined; **petals** colored as the sepals, narrowly ovate, oblique, acute, with the margins erose-fimbriate, 11-12 mm long, 3 mm wide, 3-veined; **lip** yellow or green, mottled with purple, elliptical-ovate, thick, with the margins erect and rounded below the middle, with the apex acute, 7 mm long, 3.5 mm wide, the disc with a pair of low, rounded calli below the middle, the base hinged to the rudimentary column-foot; column semiterete, stout, 3 mm long, the anther and stigma apical, the foot thick, obsolescent.

COLOMBIA: **Antioquia**: without collection data, flowered in cultivation in Medellín by A. Mejía, 19 Oct. 1977, *C. Luer 2088* (Holotype: SEL; Isotype: JAUM); without locality, flowered in cultivation in Hamburg, probably collected near Medellín by *G. Wallis s.n.* (W); forest near Santo Domingo, alt. 2000 m, collected by E. Valencia, Aug. 1988, flowered in cultivation at Colomborquídeas, 4 May 1993, *C. Luer 16645* (MO).

The first collection of this species, presumably near Medellín by Wallis, was mixed in Reichenbach's herbarium with a collection of a similar species by Patin, also from near Medellín. Reichenbach's handwriting indicates the latter as the type of *P. supravacanea*. A hydrated flower reveals that it is the same species that was described as *P. apoxys* in 1981, but a hydrated flower from the other collection by Wallis reveals that it is *P. alvaroi*.

Pleurothallis alvaroi is apparently endemic in the Central Cordillera of Colombia in the vicinity of Medellín. It is distinguished by the large, sessile, ovate leaf borne by a well-developed ramicaul, and a loose raceme of relatively large flowers. The color varies from yellow to purple. It is similar to *P. supervacanea* both vegetatively and florally, but distinguished from the latter by the broader, narrowly obtuse sepals, broader petals, and an ovate lip with a pair of small, central calli instead of intramarginal calli of the lateral lobes, and without the transverse callus above the base.

Pleurothallis dentipetala Rolfe ex Ames, Sched. Orchid. 3: 7, Jan. 1923.

Ety.: From the Latin *dentipetalus*, "with dentate petals," referring to the petals.

Syn.: *Pleurothallis dentipetala* Rolfe, nomen nudum

Syn.: *Pleurothallis stelidiformis* Schltr., Repert. Spec. Nov. Regni Veg. Beih. 19: 195, Nov. 1923.
Ety.: Named for the superficial similarity to the genus *Stelis*.

Syn.: *Pleurothallis cooperi* Schltr., Repert. Spec. Nov. Regni Veg. Beih. 19: 286, Nov. 1923.
Ety.: Named in honor of a Mr. Cooper who collected the species.

Syn.: *Pleurothallis stevensii* Luer, Selbyana 5: 181, 1979.
Ety.: Named in honor of Dr. Douglas Stevens who collected the species.

Plant medium in size to large, epiphytic, caespitose; roots comparatively coarse. Ramicauls stout, erect, 10-30 cm long, enclosed below the middle by a closely fitting, tubular sheath, and 2-3 sheaths at the base. **Leaf** erect, coriaceous, ovate, acute, 7-17 cm long, 3.5-10 cm wide, the base sessile, broadly cuneate to rounded. **Inflorescence** a sublax to congested, distichous, simultaneously many-flowered, more or less arching raceme, 10-20 cm long including the peduncle 4-8 cm long, subtended by a reclining spathe 1.5-3 cm long; floral bracts thin, infundibular, 2-3 mm long; pedicels 1.5-3 mm long; ovary

1.5 mm long; **sepals** light rose to brownish rose, glabrous, the dorsal sepal broadly ovate to suborbicular, obtuse, deeply concave, 4-5 mm long, 4-5 mm wide, unexpanded, 3-veined, the lateral sepals connate into a broadly ovate, obtuse, deeply concave synsepal, 4-4.5 mm long, 4.5-5 mm wide unexpanded, 2-veined; **petals** rose, elliptical-ovate, oblique, subacute to obtuse, with the margins erose to fimbriate, 4.5-5 mm long, 2-3.5 mm wide, 1-veined; **lip** rose, ovate-subtrilobed, thick, more or less minutely erose, with the margins erect and narrowly obtuse below the middle, narrowed above the middle with the apex acute, 3-3.5 mm long, 2-2.25 mm wide across the basal lobes, the disc with a glenion at the base, the base deflexed and concave on the end, hinged to a rudimentary column-foot; column green, semiterete, stout, 1.5 mm long, the anther and stigma apical, the foot thick, obsolescent.

COSTA RICA: without locality, flowered in cultivation at Kew, Sept. 1918, obtained from *C.H. Lankester s.n.* (Holotype: AMES; Isotype: K). **Alajuela**: Santiago de San Ramón, alt. 1075 m, Nov. 1921, *A.M. Brenes 150* (holotype of *P. stelidiformis* destroyed at B; lectotype here designated: CR; isolectotype: NY); near the desmontis de los Carranzao, near the Potrerilleson San Ramón, 1869, *A. Endres 148* (W); La Palma de San Ramón, alt. 1050 m, 12 Nov. 1929, *A.M. Brenes 129* (AMES); between San Ramón and Balsa, alt. 1100 m, 12 Sept. 1979, *D. Stevens 14253* (holotype of *P. stevensii*: SEL; isotype: MO); Monteverde Reserve, Río Peñas valley, alt. 900 m, 27 Oct. 1984, *W.A. Haber 791* (MO); La Palma, alt. 1400-1550 m, flowered in cultivation at UC, 3 Dec. 1966, collected by *C. Horich s.n.* (AMES, K, UC, US); Reserva Forestal de San Ramón, sendero Miramar, alt. 800-1000 m, 2 Nov. 1986, *G. Herrera, V. Mora & D. Hernández 170* (CR, MO). Reserva Forestal, SE of Cariblanco on SW slope of Río Sarapiquí canyon, alt. 760-800 m, 19 Nov. 1990, *S. Ingram & K. Ferrell-Ingram 724* (AMES, CR, F, K, MO, SEL). **Cartago**: region around Cartago, *Cooper s.n.* (holotype of *P. cooperi* presumably destroyed at B; lectotype here designated: AMES 31255); Paraíso, Orosí, Tapantí, alt. 1300 m, 15 Dec. 1992, *C. Ballestero 3* (CR, K).

This large species is variable and fairly frequent in central Costa Rica. The rather dense raceme of small, purplish flowers is shorter than the sessile leaf. The dorsal sepal and similar synsepal are suborbicular and deeply concave. The petals are proportionately large with a margin that varies from minutely erose to coarsely fimbriate. The triangular lip is acute with erect basal angles.

Pleurothallis dukei Luer, Lindleyana 12: 45, 1997.

Ety.: Named in honor of J.A. Duke who collected this species.

Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 8-17 cm long, with a tightly appressed, tubular sheath below the middle and 2-3 others at the base. **Leaf** erect, coriaceous, ovate, acute, 6-8 cm long, 2.2-3 cm wide, the base sessile, rounded. **Inflorescence** a fascicle of a few, erect, loose, successively 2- (to 3-?)flowered racemes, 4-5 cm long including the filiform peduncle 2.5-3 cm long, produced from a spathe 5-8 mm long at the base of the leaf; floral bracts infundibular, 2.5 mm long; pedicels slender, 2.5 mm long; ovary 1-1.5 mm long; **sepals** color not noted, but appears to have been either yellow or green, glabrous, the dorsal sepal ovate, acute, concave, 3.5-4.5 mm long, 2.5-3 mm wide expanded, 3-veined, the lateral sepals connate into an ovate, obtuse, concave synsepal, 3-4.5 mm long, 3-4 mm wide expanded; **petals** spotted, oblong, acute, 2-3.5 mm long, 1.2-1.8 mm wide, 3-veined, with the margins minutely serrate; **lip** trilobed, 1.5-2.5 mm long, 1-2 mm wide expanded, the anterior lobe narrowly acute, the basal lobes erect, rounded, concave, the disc with a well-developed glenion; the base hinged to the column-foot; **column** stout, semiterete, 1 mm long, the anther and stigma apical, the foot thick with the apex of the ovary,

PANAMA: **Darién**: cloud forest, Cerro Pirre, alt. 2,500-4,500 ft., 9-10 Aug. 1967, *J.A. Duke & T.S. Elias 13845* (Holotype: MO; Isotypes: GH, SEL, US); same data, *J.A. Duke & T.S. Elias 13731* (MO, SEL).

This species is apparently rare, confined to easternmost Panama. It is distinguished from the others of the subsection by a few, distantly and successively two-flowered racemes borne in a fascicle, about half as long as the ovate leaf. The bilabiate flowers, basically similar to the others of the subsection, are most closely similar to those of *P. volcanica*, known from the isthmus of Panama. The spotted petals of *P. dukei* are broader, three-veined instead of single-veined, and the margins are serrulate. The three-lobed lip is very similar with the acute anterior lobe and erect, rounded basal lobes embracing the column.

Pleurothallis gomezii Luer & Escobar, Orquideología 20: 62, 1996.

Ety.: Named in honor of Julián Gómez of Santa Rosa de Cabal, Colombia, discoverer of this species.

Plant large, epiphytic, caespitose; roots numerous, slender. Ramicauls stout, erect, 18-28 cm long, enclosed below by 2-3 tubular sheaths, spotted with purple; **Leaf** suberect to horizontal, coriaceous, ovate, acute, lightly acuminate, 18-21 cm long, 7-8 cm wide, the base sessile, broadly cuneate to subcordate. **Inflorescence** 1-2 loose, distichous, several-flowered racemes 11-13 cm long including the peduncle 2-3 cm long, reclining upon the leaf, subtended by a spathe 2-2.5 cm long; floral bracts thin, infundibular, 3-4.5 mm long; pedicel 3 mm long; ovary 3 mm long; flowers more or less non-resupinate, depending upon the position of the leaf; **sepals** yellow, membranous, glabrous, the dorsal sepal ovate, acute, acuminate above the middle, concave below the middle, 12.5 mm long, 4.5 mm wide, 3-veined, the lateral sepals connate into an ovate lamina, acuminate and concave above the middle, narrowly obtuse, 12 mm long, 4.75 mm wide unexpanded, 4-veined; **petals** yellow, minutely ciliate, obliquely ovate, subfalcate, acute, long-acuminate, 11 mm long, 2 mm wide, 3-veined; **lip** yellow, cuneate, thick, the presenting surface triangular, narrowed above the middle, acute, 2.75 mm long, 2 mm wide, acutely deflexed into a broad base in apposition to the undersurface of the column, broadly hinged to the rudimentary column-foot, the disc with a small glenion; column stout, 2 mm long, the anther and stigma apical, the foot thick with the apex of the column.

COLOMBIA: **Risaralda**: Pueblo Rico, Alto de la Linea, alt. 2100 m, 11 May 1993, *C. Luer, J. Luer, R. Escobar & J. Gómez 16789* (Holotype: MO).

Vegetatively, this large species resembles *P. phalangifera*, but the inflorescences are shorter than the leaves and the flowers are considerably smaller. The flowers are more similar to those of *P. rowleei* Ames, but a little larger with acuminate sepals and long-acuminate petals.

Pleurothallis hammelii Luer, Lindleyana 12: 48, 1997.

Ety.: Named in honor of Dr. Barry Hammel of the Missouri Botanical Garden who discovered this species.

Plant small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, shorter than the leaf, 2-4 cm long, with 2 tubular sheaths about the base. **Leaf** erect, coriaceous, elliptical, acute, 3-7 cm long, 1-1.5 cm wide, the base cuneate, sessile. **Inflorescence** an erect or suberect, loosely and simultaneously 3- to 4-flowered raceme, up to 3 cm long including the peduncle 0.5-1 cm long, subtended by a spathe 5-9 mm long at the base of the leaf; floral bracts infundibular, 3 mm long; pedicels 4 mm long; ovary 3 mm long; flowers described as "waxy yellow"; **sepals** glabrous, the dorsal sepal ovate, acute, 7 mm long, 3.5 mm wide, 3-veined, the lateral sepals connate into an elliptical, subacute lamina, 6.5 mm long, 4 mm wide, 4-veined; **petals** nearly as large, ovate, acute, 7.75 mm long, 2.25 mm wide, 3-veined, with the veins thickened toward the apex; **lip** thick, ovate, 2.25 mm long, 1.25 mm wide, with the apex rounded, the disc thickened around a glenion at the base, the base truncate with prominent, obtuse, basal angled, flat on the end, hinged to the column-foot; **column** semiterete, 1.5 mm long, the foot stout with the apex of the ovary, the anther, rostellum and stigma apical.

PANAMA: **Panamá**: epiphytic in forest along the Llano-Carti road, alt. 1200 m, 13 Jan. 1978, *B. Hammel 868* (Holotype: SEL), C. Luer illustr. 16525.

This species is known from only one collection in eastern Panama. Although the flowers are of the same basic pattern as the other species in the subsection, this species is distinguished by the ramicaul slightly shorter than the elliptical leaf; a short, simultaneously few-flowered raceme; dorsal sepal, synsepal and petals broadly ovate, acute, more or less similar in shape and size; and an ovate lip with a broad, transversely angled, truncate base.

Pleurothallis imitor Luer, Lindleyana 11: 78, 1996.

Ety.: From the Latin *imitor*, "an imitator," referring to the similarity of the species to a species of section *Macrophyllae-Fasciculatae*.

Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 12-18 cm long, with a close, tubular sheath below the middle. **Leaf** erect, coriaceous, ovate, acute, acuminate, 7-11.5 cm long, 2.5 cm wide, the base cordate, sessile. **Inflorescence** a fascicle of 1- to 2-flowered peduncles, subtended by a spathe 15-18 mm long, at the base of the leaf; peduncles 8-12 mm long; floral bracts 5 mm long; pedicels 8 mm long; ovary 4 mm long; **sepals** yellow, membranous, glabrous, the dorsal sepal ovate, acute, 12 mm long, 6 mm wide, 5-veined, the lateral sepals completely connate into an ovate synsepal, 11 mm long, 6.5 mm wide, 4-veined; **petals** entire, oblong-subfalcate, acute, 9 mm long, 1.5 mm wide, 3-veined; **lip** yellow, entire, triangular-sagittate, acute, 4.5 mm long, 2.5 mm wide, the basal angles acute, erect, the disc smooth with a distinct glenion at the base, the base reflexed into a claw, hinged to the column-foot; **column** stout, terete, 2 mm long, the anther and stigma apical, the foot thick, abbreviated.

COSTA RICA: **Puntarenas**: east of Santa Elena de Monteverde on the continental divide, alt. 1500 m, 6 Aug. 1988, *J.T. Atwood & W. Haber 88-60* (Holotype: SEL), C. Luer illustr. 17055.

This species is known from a single collection near the Monteverde Preserve. With the cordate leaf and a basal, abbreviated inflorescence it appears to be a member of section *Macrophyllae-Fasciculatae*, but the flowers are produced either singly or successively in a two-flowered raceme. The ovate, acute dorsal sepal and the synsepal are similar. The petals are falcate-oblong, acute and three-veined. The lip is sagittate and acute with a reflexed basal claw between erect, acute, basal angles.

Pleurothallis languida Luer, Orquideología 21: 95, 1998.

Ety.: From the Latin *languidus*, "drooping," referring to the flowers.

Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 10-13 cm long, with a tubular sheath near the middle and 2-3 sheaths at the base; **Leaf** erect coriaceous, ovate, acute, slightly acuminate, 5.5-8.5 cm long, 2-2.5 cm wide, the base cuneate, sessile. **Inflorescence** an erect, distantly flowered, distichous, several-flowered raceme, 8-15 cm long including the peduncle 4-5 cm long, subtended by a spathe 1 cm long; floral bracts tubular, 6 mm long; pedicel arching, 7-8 mm long; ovary 2 mm long; flowers non-resupinate; **sepals** light green, lightly suffused with brown along the veins, membranous, glabrous, the middle sepal ovate, acute, acuminate and recurved above the middle, concave below the middle, 6.5 mm long, 2.5 mm wide, 3-veined, the lateral sepals connate into an ovate lamina, acute, acuminate and recurved above the middle, concave below the middle, 6.5 mm long, 2.8 mm wide, 4-veined; **petals** light green, narrowly, subfalcate, acute, long-acuminate, 5.5 mm long, 1 mm wide at the base, 3-veined, the margins minutely erose below the middle; **lip** light green, ovate, concave, obtuse at the apex, and with the sides erect, obtuse, 2.5 mm long, 2 mm wide expanded, broadly hinged to the rudimentary column-foot, the disc with a small transverse callus above the base; column stout, 1 mm long, the anther and stigma apical, the foot thick with the apex of the column.

COLOMBIA: **Cauca**: San Juan de Villalobos, collected by J.L. Aguirre, July 1993, flowered in cultivation at Colomborquídeas, 23 May 1995, *C. Luer 17564* (Holotype: MO).

This species has no immediate relative. It belongs somewhere between subsection *Acroniae* and subsection *Longiracemosae*, but because of the proportionately long pedicels, it is placed here. The flowers droop on long, arching pedicels in an erect, distantly flowered raceme so that they are non-resupinate. The middle sepal and synsepal are similarly concave below the middle, and acuminate and recurved above the middle. The petals, nearly equally long, are narrowly falcate, denticulate below the middle, and curved upward. The lip is ovate, concave and obtuse.

Pleurothallis longipedicellata Ames & C.Schweinf., Sched. Orch. 8: 27, 1925.

Ety.: From the Latin *longipedicellatus*, "with long pedicels," referring to the inflorescence.

Plant medium in size to large, epiphytic, caespitose; roots slender. Ramicauls slender, suberect to erect, 10-35 cm long, with a tubular sheath below the middle and 2-3 others above the base. **Leaf** suberect to erect, coriaceous, ovate, acute, slightly acuminate, 10-15 cm long, 5-9 cm wide, the base cordate, sessile. **Inflorescence** a suberect to arching, lax, distichous, simultaneously several-flowered raceme, 7-11 cm long including the peduncle ca. 3 cm long, subtended by a reclining spathe 1.5-2.5 cm long, at the base of the leaf; floral bracts 3-4 mm long; pedicels 8-18 mm long; ovary 4 mm long; **sepals** purple, membranous, glabrous, the dorsal sepal ovate, obtuse, slightly acuminate, 6 mm long, 5 mm wide, 3-veined, the lateral sepals completely connate into an ovate synsepal, 7 mm long, 5 mm wide, 4-veined; **petals** orange-brown, oblong-subfalcate, acute, minutely denticulate, 5 mm long, 1.75 mm wide, 3-veined; **lip** yellow-brown, thick, ovate-triangular, obtuse, 4 mm long, 2.5 mm wide, the margins rounded and erect below the middle, the disc with a large glenion at the base, the base shallowly concave on the end, hinged to the column-foot; **column** stout, terete, 2 mm long, the anther and stigma apical, the foot thick, abbreviated.

COSTA RICA: **Cartago**: La Estrella, 27 Mar. 1924, *C. H. Lankester 792* (Holotype: AMES); La Estrella, 26 Mar. 1924, *P.C. Standley 39081* (AMES); Cordillera de Talamanca, near El Copey, alt. 1800 m, 23 Apr. 1949, *L.O. Williams & P.H. Allen 16522* (AMES, EAP). **San José**: Desamparados, Cordillera de Talamanca, Casamata, at cross above San Cristóbal Norte, alt. 1900 m, 31 Mar. 1995, *J. Morales & L. Bohs 3803* (CR, MO).
PANAMA: **Chiriquí**: above Guadeloupe, 17 Dec. 1976, *C. Luer & H. Butcher 1358* (SEL).

This large species occurs in Costa Rica and western Panama where it is locally frequent. The lax, long-pedicellate raceme is about as long as the leaf; the dorsal sepal and synsepal are obtuse; the petals are subfalcate and minutely denticulate; and the lip is thickly ovate with a large glenion. In *Venezuelan Orchids Illustrated* as well as the Field Guide, *P. sanluisii* is misidentified as this species.

Pleurothallis lopezii Luer & Escobar, Orquideología 21: 102, 1998.

Ety.: Named in honor of Jorge Lopez of Colomborquídeas who discovered this species.

Plant large, epiphytic, prolific, caespitose; roots slender. Ramicauls stout, erect, superposed, 20-40 cm long, enclosed above the base by a closely fitting, tubular sheath, and another at the base. **Leaf** erect, coriaceous, ovate, subacute, acuminate, 12-16 cm long, 7-9 cm wide, the base sessile, deeply cordate. **Inflorescence** a loose, distichous, simultaneously many-flowered, strict 30-35 cm long including the peduncle 5-8 cm long, subtended by a reclining spathe 1.5-2 cm long; floral bracts thin, tubular, 5-9 mm long; pedicels 20 mm long below to 8 mm long above; ovary 2 mm long; **sepals** translucent white, glabrous, the dorsal sepal ovate, acute, acuminate, deeply concave, 7 mm long, 4 mm wide, expanded, 3-veined, the lateral sepals connate into an ovate, subacute, acuminate synsepal, 7 mm long, 4 mm wide, 4-veined; **petals** white with light red markings, elliptical-ovate, oblique, acute, acuminate, 7 mm long, 2 mm wide, 3-veined, with the margins deeply fimbriate; **lip** yellow with the apex red, ovate-subtrilobed, 2.5 mm long, 2.5 mm wide, the sides below the middle broadly rounded and erect, with the margins minutely erose below the middle, fimbriate above the middle to the obtuse, apiculate apex, the disc with a minute, erect, rounded callus in the center, shortly channeled above the callus, the base broadly truncate, hinged to a rudimentary column-foot; column semiterete, stout, 1.5 mm long, bidentate at the apex, the anther apical, the stigma subapical, the foot thick, obsolescent.

COLOMBIA: **Antioquia**: El Retiro, Hda. Normandia above Colomborquídeas, alt. 2500 m, May 1993, flowered in cultivation at Colomborquídeas, 26 Mar. 1997, *R. Escobar 8291* (Holotype: MO).

Florally this large species, found recently in the forest above Colomborquídeas, is basically similar to most of the other species of the section, but it is readily distinguished by the large, prolific habit. The lax raceme is long, strict and erect, and the pedicels are elongate. The dorsal sepal and synsepal are similar: ovate and acuminate. The petals are deeply fringed. The lip is broadly cordate, with erect, rounded, basal lobes, with the margins of the middle lobe minutely fimbriate. In the center of the disc there is a well-defined, minute, rounded callus.

Pleurothallis luctuosa Rchb.f., Linnaea 61: 48, 1877.

Ety.: From the Latin *luctuosus*, "sorrowful," for the news of Endres' death.

Syn.: *Humboldtia luctuosa* (Rchb.f.) Kuntze, Rev. Gen. Pl. 2: 667, 1891.

Plant medium in size, epiphytic, caespitose, roots slender. Ramicauls slender, erect, 4-12 cm long, enclosed below the middle by a closely fitting tubular sheath, and 2-3 sheaths at the base. **Leaf** erect, coriaceous, narrowly elliptical-ovate, acute, 4-12 cm long, 0.5-1.5 cm wide, the base sessile, narrowly cuneate. **Inflorescence** an erect to arching, loose, distichous, simultaneously few- to several-flowered raceme 6-8 cm long including the peduncle ca. 2 cm long, subtended by a spathe 0.5-1 cm long; floral bracts thin, tubular, 3-4 mm long; pedicels 4-5 mm long; ovary 2 mm long; **sepals** bright purple to red, membranous, glabrous, the dorsal sepal narrowly ovate, acute, acuminate, concave below the middle, 20 mm long, 4 mm wide, 3-veined, the lateral sepals connate into a narrowly triangular, acute lamina, 20 mm long, 5 mm wide, 4-veined; **petals** colored as the sepals, obliquely ovate, subfalcate, acute, with the margins minutely erose-serrulate, 8 mm long, 2 mm wide, 3-veined; **lip** yellow-green, suffused with purple, thick, ovate-trilobed, 3 mm long, 2.5 mm wide, acute at the apex, the basal lobes obtuse, erect, flanking the column, the disc with a small, central glenion, the base truncate-concave, hinged to the column-foot; column stout, 1.5 mm long, the anther and stigma apical, the foot thick, obsolescent

COSTA RICA: **Alajuela**: San Ramón, alt. 3,500 ft., 1868, *A. Endres 50* (Holotype: W; Isotype: AMES). Piedades de San Ramón, alt. 1025 m, 5 June 1925, *A.M. Brenes (38)1249* (AMES). **Cartago**: Sabanillas de Acosta, cultivated at La Concavas, June 1928, *C.H. Lankester 1178* (AMES). **Guanacaste**: Parqué Nacional Guanacaste, Biologica Volcán Cacao, Estación Pitilla, alt. 1100 m, 24 Oct. 1990, *C. Chávez 396* (CR, MO).
COLOMBIA: **Cauca**: near Popayán, cultivated by Amalia Lehmann, flowered at Colomborquídeas, 23 May 1985, *C. Luer 17556* (MO). **Nariño**: east side of Gorgona Island, alt. 50-100 m, 11 Feb. 1939, *E.P. Killip & H. García 33162* (COL, US).
ECUADOR: **Pichincha**: 20 Km west of Santo Domingo, alt. 350 m, 11 June 1961, *P. Cazelet & T. Pennington 5300* (BM, K, NY, US).

This species was named by Reichenbach upon learning of the death of Endres in Costa Rica. It is widely distributed from Costa Rica through the Andes of Colombia and Ecuador at a low altitude. It is characterized by the slender habit with narrow leaves, and a loosely flowered raceme of purple flowers with narrow sepals. The petals are subsigmoid and the lip is triangular.

Pleurothallis nox-media Luer & Escobar, Orquideología 21: 104, 1998.

Ety.: From the Latin *nox-media*, "midnight," in allusion to the dark color of the flowers.

Plant medium in size to large, epiphytic, caespitose; roots slender. Ramicauls stout, erect, 10-12 cm long, with a close, tubular sheath below the middle and 2-3 others at the base. **Leaf** erect, coriaceous, ovate, acute, 12-14 cm long, 5-5.5 cm wide, the base sessile, rounded or subcordate. **Inflorescence** an erect, to arching, lax, distichous, simultaneously few- to several-flowered raceme, 12-16 cm long including the peduncle 6-9 cm long, borne from a slender spathe 1.7 cm long, at the base of the leaf; floral bracts infundibular, 6 mm long below, 3 mm long above; pedicels 6-8 mm long; ovary 4-5 mm long; **sepals** deep purple, glabrous, the dorsal sepal ovate, acute, concave, 15 mm long, 8 mm wide, 3-veined, the lateral sepals connate into an ovate, obtuse synsepal, 14.5 mm long, 9 mm wide, 6-veined, with the margins above the middle incurved; petals deep purple, oblong-sigmoid, oblique, acute, minutely lacerate, 13 mm long, 4 mm wide, held within the margins of the synsepal; lip deep purple, oblong, convex, 6 mm long, 4 mm wide, the apex broadly rounded and recurved, the margins above the middle minutely lacerate, with erect, rounded, basal angles, the disc with a pair of small, conical calli above the base, hinged to the base of the column; column purple, semiterete, 3 mm long, the anther and bilobed stigma apical, the foot rudimentary.

COLOMBIA: **Antioquia**: Carmen de Vivaral, alt. 2000 m, collected by Edwin Granada, cultivated by Francisco Villegas at Orquifollajes, 9 July 1996, *C. Luer 17987* (Holotype: MO).

This large relative of the widely distributed *P. rowleei* is apparently rare in the department of Antioquia from whence it is known only from the original collection. It is characterized by stout ramicauls; large, sessile cordate-ovate leaves; and a longer raceme of relatively large, purple-black flowers. The fringed petals are retained within the incurved sides of the synsepal. The lip is oblong and convex with the rounded apex recurved.

Pleurothallis pallida Luer, Selbyana 3: 358, 1977.
Ety.: From the Latin *pallidus*, "pale," referring to the pastel colors of the flowers.

Plant small, epiphytic, shortly repent, the rhizome stout, branching, 3-5 mm long between ramicauls; roots slender. Ramicauls ascending to erect, slender, terete, 2.5-6 cm long, with a tubular sheath below the middle and 1-2 others at the base. **Leaf** erect, coriaceous, elliptical, subacute to obtuse, 4-7 cm long, 2-3.8 cm wide, base broadly cuneate to rounded, sessile. **Inflorescence** a solitary, arching, laxly distichous to secund raceme, 9-14 cm long including the peduncle 4-6 cm long, from a narrow spathe ca. 1.5 cm long at the base of the leaf; floral bracts 2 mm long, pedicels slender, 8-17 mm long; ovary 2 mm long; **sepals** pale green, more or less suffused with pale rose toward the apices, membranous, glabrous, the dorsal sepal ovate, acuminate, acute, concave, 8 mm long, 4 mm wide, 3-veined free from the laterals, the lateral sepals connate into an ovate synsepal similar to the dorsal sepal, 7 mm long, 5 mm wide, 4-veined; **petals** narrowly ovate-subfalcate, acuminate, acute, microscopically denticulate, 7 mm long, 1.5 mm wide, 1-veined; **lip** pale green, broadly ovate, obtuse, shortly acuminate, 3.5 mm long, 2.5 mm wide, the disc shallowly concave with a glenion above the base, the base broadly short-unguiculate, hinged to the column-foot; column stout, semiterete, 1.5 mm long, with a bulbous, glandular foot.

PANAMA: **Coclé**: epiphytic in the hills north of El Valle, alt. 1000 m, 6 March 1976, cult. 14 April 1976, *C. Luer, R. Dressler, J. Luer & P. Taylor 954* (Holotype: SEL).

This species, apparently endemic in Panama, is closely allied to the much larger *P. longipedicellata*. *Pleurothallis pallida* is distinguished by its small habit; short ramicauls borne by a shortly repent rhizome; an erect, elliptical leaf; and a weak, lax, arching raceme of long-pedicellate, pale greenish pink flowers that far surpasses the leaf. The dorsal sepal and synsepal are acute and acuminate; the petals are acute and minutely denticulate; and the small lip is broadly ovate and apiculate.

Pleurothallis phalangifera (Presl) Rchb.f., Ann. Bot. Syst. 6: 168, 1861.
Bas.: *Acronia phalangifera* Presl, Rel. Haenk. 1: 104, 1827.
Ety.: From the Greek *phalangiferus*, "spider bearing," in allusion to the inflorescence.

Syn.: *Pleurothallis decurva* Lindl., Folia Orch. *Pleurothallis* 8, 1859.
Ety.: From the Latin *decurvus*, "decurved," referring to the raceme.

Syn.: *Pleurothallis mathewsii* Lindl., Comp. Bot. Mag. 2: 355, 1836.
Ety.: Named in honor of Andrew Matthews who collected the species.

Syn.: *Pleurothallis bogotensis* Lindl., Orch. Linden. 1, 1846.
Ety.: Named for the community of Santa Fé de Bogotá near where the species was collected.

Syn.: *Humboldtia decurva* (Lindl.) Kuntze, Rev. Gen. Pl. 2: 667, 1891.

Syn.: *Humboldtia phalangifera* (Presl) Kuntze, Rev. Gen. Pl. 2: 667, 1891.

Syn.: *Humboldtia mathewsii* (Lindl.) Kuntze, Rev. Gen. Pl. 2: 668, 1891.

Syn.: *Pleurothallis schnitteri* Schltr., Notizbl. Bot. Gart. Berlin 7: 530, 1921.
Ety.: Named in honor of R. Schnitter who collected this species.

Syn.: *Pleurothallis ineziae* Schltr., Repert. Spec. Nov. Regni Veg. Beih. 27: 47, 1924.
Ety.: Named for Señorita Inez Bravo of Pasto at Hopp's request.

Syn.: *Pleurothallis werneri* Schltr., Repert. Spec. Nov. Regni Veg. Beih. 27: 57, 1924.
Ety.: Named in honor of Werner Hopp who collected this species.

Syn.: *Pleurothallis nasuta* Schltr., Repert. Spec. Nov. Regni Veg. Beih. 27: 164, 1924.
Ety.: From the Latin *nasutus*, "large-nosed," in allusion to the middle lobe of the lip.

Plant large, epiphytic to terrestrial, repent to caespitose, the rhizome stout, up to 4 cm between ramicauls; roots slender. Ramicauls stout, erect, 15-40 cm long, enclosed below the middle by a closely fitting tubular sheath, often spotted with purple, and 2-3 sheaths at the base. **Leaf** erect to suberect, coriaceous, ovate, acute, 10-20 cm long, 5-10 cm wide, the base sessile, broadly cuneate to rounded or subcordate. **Inflorescence** a loose, distichous, simultaneously several-flowered raceme 12-25 cm long including the peduncle 5-10 cm long, reclining upon the leaf with the rachis extending beyond the apex, subtended by a spathe 2-3.5 cm long; floral bracts thin, infundibular, 1 cm long; pedicels 1-1.5 cm long; ovary 4 mm long; **sepals** yellow to purple, rarely white, membranous, glabrous, the dorsal sepal ovate, acute, acuminate above the middle, concave below the middle, 30-45 mm long, 6-7 mm wide, 3-veined, the lateral sepals connate into an ovate lamina, acuminate, acute, 30-45 mm long, 5-8 mm wide unex-

panded, 4-veined; **petals** colored as the sepals, obliquely ovate, subfalcate, acute, long-acuminate, with the margins minutely erose-serrulate, 20-38 mm long, 2-3 mm wide, 3-veined; **lip** colored as the sepals, ovate-trilobed, thick, broadly and obtusely lobed below the middle, the anterior lobe oblong-ovate, acute to subacute, 5-7 mm long, 3-4 mm wide below the middle, the disc with a small glenion, the base truncate-concave, broadly hinged to the rudimentary column-foot; column stout, 2 mm long, the anther and stigma apical, the foot thick with the apex of the column.

PERU: **Huánuco**: near "Huanocco," *T. Haenke s.n.* (Holotype: PR?). **Amazonas**: Chachapoyas, 1840, *A. Matthews 3207* (K); Chachapoyas, Cerros Calla Calla above Leimebamba, alt. 2400 m, 26 Mar. 1964, *P.C. Hutchison & D. Bennett 4553* (AMES, F, G, K, LE, M, NY, M, MICH, MO, P, UC, US, USM). **Amazonas**: Bongará, southwest of Pomacochas, alt. 2200-2400 m, 16 June 1962, *J.J. Wurdack 861* (AMES, USM); Bongará, between Pomacochas and Vilcaniza, alt. 2050 m, 19 Oct. 1965, *A. Sagástegui 5983* (AMES, HUT); Chachapoyas, west of Molinopampa, alt. 2350-2400 m, 23 July 1962, *J.J. Wurdack 1475* (AMES); **Cuzco**: Yanano, alt. 6,000 ft., 13-16 May 1923, *J.F. Macbride 3848* (AMES); Urubamba, Incapata, alt. 2800 m, 28 Mar. 1942, *C. Vargas 2646* (AMES); Yanano, alt. 6,000 ft., 13-16 May 1923, *J.F. Macbride 3848* (AMES).
ECUADOR: **Carchi**: between El Playón de San Francisco and El Carmelo, alt. ca. 3000 m, 14 Apr. 1979, *B. Løjtnant, U. Molau & M. Madison 12525* (AAU, GB); north of El Playón, alt. 3100 m, 20 Mar. 1991, *C. Luer, J. Luer & A. Hirtz* (MO); between Tulcán and El Carmelo, alt. 3200 m, 7 July 1990, *C.H. Dodson, E. Hagsater, D. Rubio & N. Rivera 18406* (MO); terrestrial above Maldonado, alt. 3050 m, 14 Jan. 1992, *C. Luer, J. Luer, P. Jesup & A. Jesup 16009* (MO). **Sucumbíos**: ridge above La Bonita, alt. 2300 m, 15 Mar. 1996, *S. Dalström, S. Ingram & K. Ferrell-Ingram 2155* (MO). **Pichincha**: from woods near Quito, Sept. 1848, *W. Jameson 438* (K). **Loja**: between Loja and Saraguro, alt. 2700-2800 m, 22 Apr. 1980, *G. Harling & L. Andersson 18510* (GB). **Napo**: east Andes near Baeza, alt. 6,000 ft., 1857, *W. Jameson s.n.* (K); between Baeza and Tena, alt. 2200 m, *C.H. Dodson & A. Hirtz 15878* (MO). **Loja**: "mountains of Loxa," Zambrabamba, 1837, *A. Matthews 1902* (holotype of *P. mathewsii*: K; Isotype: W). **Morona-Santiago**: between Sigsig and Chiquinda, alt. 2500 m, 11 Aug. 1990, *A. Hirtz 5070* (MO). **Napo**: northwest of El Chaco, alt. 1900 m, *S. Dalström & L. Dalström 1342* (MO). **Zamora-Chinchipe**: Tapichalaca, south of Yangana, alt. 2000 m, Aug. 1985, *D. D'Alessandro 483* (MO).
COLOMBIA: **Antioquia**: Medellín, *G. Wallis s.n.* (W); Medellín, *Patin s.n.* (W); Quindio, 1882, *Schmidtchen* (W); north of Santa Rosa de Osa, alt. 2650 m, 14 Mar. 1989, *C. Luer, J. Luer, S. Dalström & W. Teague 14139* (MO); Urrao, between Betulia and Urrao, alt. 2200 m, 1 June 1995, *C. Luer, J. Luer, R. Escobar et al. 17697* (MO). **Cundinamarca**: Bogotá, Tequendama, Nov. 1842, *J. Linden 1271* (holotype of *P. bogotensis*: K; isotype: W); near Tequendama falls, 8-11 Dec. 1852, *J.F. Holton 188* (AMES, K); same area, alt. 2300-2400 m, 15 Sept. 1917, *F.W. Pennell 1965* (AMES, NY); same area, Zipaquirá, alt. 2800-2900 m, 20-24 Oct. 1917, *F.W. Pennell 2633* (AMES, NY); between Bogotá and Fusagasugá, alt. 1770 m, *R. Schnitter s.n.* (holotype of *P. schnitteri* destroyed at B); SW of Bogotá, alt. 2000 m, 1921, *R. Schnitter s.n.* (?B, type of *P. nasuta*); Montes de Usaquén, alt. 2700-2800 m, Apr. 1940, *L. Uribe Uribe 428* (AMES); Quebrada del Chicó, 10 Nov. 1943, *M. Schneider 14* (AMES); same area, 30 Nov. 1952, *R.E. Schultes 18598* (AMES); Silvania, alt. ca. 1700 m, collected by Los Torres, cult. by Colomborquídeas, 2 Jan. 1993, *R. Escobar 5177* (MO). **Cauca**: near Corrales, Volcán Puracé, alt. 8,000 ft., 18 May 1878, *F.C. Lehmann 2610* (AMES); near Paletará, alt. 3000 m, 6 Feb. 1884, *F.C. Lehmann 3535* (AMES, BR, K); Quebrada de Santo Domingo, alt. 2700-2800 m, 11-14 Dec. 1944, *J. Cuatrecasas 19189* (AMES); Barbacoas, near the west coast, alt. 1200 m, July 1921, *W. Hopp 90* (holotype of *P. werneri* destroyed at B). **Nariño**: Daza, NW of Pasto, alt. 2900 m, Jan. 1921, *W. Hopp 10* (holotype of *P. ineziae* destroyed at B); Sotomayor, alt. ca. 1800 m, collected by J. Aguirre, cult. by Colomborquídeas, 12 Dec. 1992, *R. Escobar 5027* (MO). **Putumayo**: Alta de Cruz above Encano, alt. 11,000 ft., 1 Nov. 1946, *M.B. Foster & R. Foster 2058* (AMES). **Tolima**: 5 July 1920, *M.T. Dawe 797* (K); Murillo, Río Vellocitas, alt. 2850 m, 23 Nov. 1948, *J.S. Hawkes 366* (K). . Without locality, eastern slope of the Andes, alt. 10,000 ft., *W. Jameson 19* (holotype of *P. decurva*: K).
VENEZUELA: **Lara**: Iribarren, Fila de Las Goteras, alt. 1500 m, 11 Aug. 1970, *J.A. Steyermark et al., 103692* (AMES, VEN). **Mérida**: Mérida, alt. 6,000 ft., *L. Schlim 1191* (W); above Azulita, alt. 2100-2400 m, 1 Sept. 1966, *J.A. Steyermark & M. Rabe 97130* (AMES, VEN); below Páramo de Tamá near Colombian border, alt. 2750-2950 m, 20 May 1967, *J.A. Steyermark, G.C.K. & E. Dunsterville 98503* (AMES, VEN)

This large species is frequent and variable in its wide distribution through the Andes from Venezuela into Peru at altitudes from 1500 to 3000 meters above sea level. Variations have been described several times. In the eighteenth century it was painted for Mutis. The rhizome is stout, sometimes producing ramicauls a centimeter apart. From the base of the large leaf the lax inflorescence of several, large, fragile flowers usually exceeds the apex. The texture of the sepals and petals is membranous and soft. The color varies from purple to yellow, and rarely white. The sepals and petals are narrowly ovate and long-attenuate. The lip is bicallous and trilobed with the basal lobes obtuse and the middle elongate and acute.

Pleurothallis polysticta Luer, Selbyana 5: 176, 1979.

Ety.: From the Greek *polystictos*, "many-spotted," referring to the flowers.

Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 3-8 cm long, with a close, tubular sheath above the base and another at the base. **Leaf** coriaceous, sessile, narrowly elliptical-ovate, acute, 4-6 cm long, 0.8-1.4 cm wide, the base cuneate. **Inflorescence** a lax, simultaneously few-flowered raceme, 7-15 cm long including the slender peduncle 3-8 cm long, borne from a prostrate spathe 5-9 mm long, at the base of the leaf; floral bracts 3-5 mm long; pedicels 15 mm long below to 4 mm long above; ovary 1.5-2.5 mm long; **sepals** translucent greenish white, spotted with light purple, glabrous, the dorsal sepal broadly ovate, obtuse, acuminate, concave below middle, 6 mm long, 4 mm wide, 3-veined, the lateral sepals connate into an ovate, acuminate synsepal similar to the dorsal sepal, 6 mm long, 4-5 mm wide, 4-veined; **petals** spotted with purple, narrowly triangular, acute, attenuate, 6.5 mm long, 0.75-1 mm wide, 1-veined; lip green, dotted with purple, cordate-ovate, obtuse, apiculate, 4 mm long, 3.75 mm wide, the basal angles erect, subacute, the disc cellular-glandular, with a pair of calli in the center adjacent to a basal glenion above the base, the base broadly truncate between the basal angles, hinged to the base of the column; column semiterete, 2 mm long, the anther and bilobed stigma apical, the foot rudimentary.

PANAMA: **Darién**: Cerro Pirre, collected by R.L. Dressler, July 1977, flowered in cultivation 27 Mar. 1978, *C. Luer 2799* (Holotype: SEL).
COLOMBIA: **Antioquia**: El Retiro, collected above Colomborquídeas, alt. ca. 2500 m, 19 May 1993, *C. Luer 16889* (MO). **Chocó**: Bahia Solano, Mecana, alt. 250 m, cult. at Colomborquídeas, 5 Jan. 1993, *R. Escobar 5229*

This species from the Western Cordillera of Colombia and adjacent Panama has been found at both low and high altitudes. It is characterized by the medium-sized habit with narrowly elliptical, sessile leaves; a lax, few-flowered raceme longer than the leaf of long-pedicellate, translucent greenish, purple-spotted flowers with narrow, attenuate petals longer than the obtuse but acuminate dorsal sepal and similar synsepal; and a broadly cordate, apiculate lip with a small pair of calli at the base of the disc.

Pleurothallis rowleei Ames, Sched. Orch. 1: 11, 1922.

Ety.: Named in honor of W.W. Rowlee who collected this species.

Syn.: *Pleurothallis cucullata* Ames, Sched. Orch. 3: 5, 1923.
Ety.: From the Latin *cucullatus*, "cucullate," referring to the bonnet-shaped dorsal sepal.

Syn.: *Pleurothallis rhodocardia* Garay, Svensk. Bot. Tidskr. 47: 204, 1953.
Ety.: From the Greek *rhodocardia*, "red heart," referring to the flowers.

Plant medium in size to large, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 5-15 cm long, with a close, tubular sheath below the middle and 2-3 others above the base. **Leaf** erect, coriaceous, ovate, acute, 5-12 cm long, 1.5-4 cm wide, the base sessile, broadly cuneate. **Inflorescence** an erect, suberect to arching, lax, distichous, simultaneously few- to several-flowered raceme, 5-14 cm long including the peduncle 1.5-6 cm long, borne from a slender spathe 1-1.5 cm long, at the base of the leaf; floral bract 2-3 mm long; pedicel 4-6 mm long; ovary 2.5 mm long; **sepals** purple, glabrous, the dorsal sepal ovate, acute, concave, 11 mm long, 5 mm wide, 3-veined, the lateral sepals connate into an ovate, acute synsepal, 11 mm long, 6 mm wide, 4-veined; petals purple, sigmoid, oblique, decurved, acute, denticulate, 9.5 mm long, 2 mm wide; lip purple, triangular-sagittate, 4 mm long, 2.5 mm wide, the apical lobe narrowly triangular, acute, the basal angles erect, rounded, the disc slightly concave with a glenion above the base, the base subtruncate, thick, reflexed, hinged to the base of the column; column red, semiterete, 2.5 mm long, the anther and bilobed stigma apical, the foot rudimentary.

COSTA RICA: **Alajuela**: La Palma, 8 July 1918, *W.W. & H.E. Rowlee 236* (Holotype: AMES); La Palma, 6 Jan. 1976, collected and cult. by *F L Stevenson 1-15575* (SEL), C. Luer illustr. 1271; Reserva Forestal de San Ramón, 24 Feb. 1987, *G. Herrera & V. Mora 470* (MO). **Puntarenas**: Monteverde Reserve, alt. 1600-1750 m, 17 July 1986, *W.A. Haber & E. Belo 5315* (MO). **Heredia**: San Rafael, northwest of Cerro Redondo, alt. 1620-1850 m, 25 Nov. 1990, *S. Ingram & K. Ferrell-Ingram 746* (CR, K, SEL). Without locality, ca. 1867, *A. Endres 72, 128* (W); Without locality, flowered at K, obtained from *C.H. Lankester s.n.* (holotype of *P. cucullata*: K).
PANAMA: **Chiriquí**: Bajo Chorro, alt. 1810 m, *Davidson*; **Darién**: Cana-Causí trail, alt. 1650 m, *Terry & Terry 156*.

COLOMBIA: **Antioquia**: near Medellín, *G. Escobar 542* (AMES). **Chocó**: Bahia Solano, Mecana, alt. 250 m, collected by Peter T., Apr. 1991, cultivated at Colomborquídeas, 5 Jan. 1993, *R. Escobar 5229* (MO). **Tolima**: Inzá, alt. 1400-1800 m, *F.C. Lehmann B.T. 320* (K); Río Timbiqui, alt. 500 m, *F.C. Lehmann B.T. 342* (K). **Nariño**: Ricaurte, *F.C. Lehmann B.T. 318* (K). **Cauca**: El Tambo, La Costa, alt. ca. 1000 m, Apr. 1937, *K. von Sneidern 1603* (holotype of *P. rhodocardia*: S; isotype: AMES).
ECUADOR: **Esmeraldas**: west of Lita toward San Lorenzo, alt. 750 m, 18 Jan. 1987, *C. Luer, J. Luer, A. Hirtz et al. 12410* (MO).

This species is relatively frequent and widely distributed at low altitudes from Costa Rica through Panama and the Western Cordillera of Colombia to western Ecuador. It is characterized by the ovate leaf more or less as long as the ramicaul, and a more or less equally long, lax raceme of relatively large, purple flowers. The sepals are acute, the petals are denticulate and held downward along the side of the lip; and the anterior lobe of the triangular lip is acute. The flowers of *P. cucullata* are essentially the same as those of *P. rowleei*. Flowers from an isotype of *P. rhodocardia* also are no different from those of the usual *P. rowleei*.

Pleurothallis sanluisii Foldats, Acta Bot. Ven. 3: 390, 1968.

Ety.: Named for Sierra de San Luis where the species was collected.

Syn.: *Pleurothallis stalkyi* Luer, Selbyana 7: 124, 1982.

Ety.: Named in honor of G.C.K. "Stalky" Dunsterville, noted author and illustrator of Venezuelan orchids.

Plant medium in size to large, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 9-13 cm long, with a close, tubular sheath below the middle and 2-3 others above the base. **Leaf** erect, coriaceous, ovate, convex, acute, 5-7 cm long, 4-4.75 cm wide, the base rounded, sessile, shallowly cordate. **Inflorescence** an erect to suberect, lax, distichous, simultaneously few- to several-flowered raceme, 7-10 cm long including the peduncle ca. 4 cm long, borne from a slender spathe 1-1.5 cm long, at the base of the leaf; floral bract 2-4 mm long; pedicel 5-10 mm long; ovary 2-3 mm long; **sepals** light yellow-green, minutely spotted with red-brown, glabrous, the dorsal sepal ovate, obtuse, shortly acuminate, concave, 5 mm long, 4 mm wide, 3-veined, the lateral sepals connate into an ovate, obtuse, concave synsepal, 5.5 mm long, 4 mm wide, 4-veined; petals yellow-green, spotted with red-brown, sigmoid, oblique, decurved, acute, denticulate, 4.5 mm long, 1.25 mm wide; lip yellow, subtrilobed, 2.5 mm long, 1.5 mm wide, unexpanded, the apical lobe triangular, acute, the sides or lateral lobes broadly rounded, erect, flanking the column, the disc slightly concave between a pair of broad, rounded calli, with an erect, conical callus above the base, the base broadly truncate, hinged to the base of the column; column yellow, semiterete, 2 mm long, the anther and bilobed stigma apical, the foot rudimentary.

VENEZUELA: **Falcón**: Sierra de San Luis, vicinity of Hotel Parador, south of La Tabla, alt. 1400-1500 m, 17 July 1967, *J.A. Steyermark 98995* (Holotype: VEN; Isotype: M); *J.A. Steyermark 98996* (Paratype: AMES, US); cultivated by G.C.K. Dunsterville at El Hatillo, 25 July 1982, *C. Luer 8092* (SEL).
?COLOMBIA: without collection data, cultivated by J. Hermans in Enfield, England, 19 July 1997, *C. Luer 18560A* (MO).

This species is probably endemic in the coastal mountains of Venezuela. It was misidentified as *P. longipedicellata* in *Venezuelan Orchids Illustrated*, volume 5, as well as in the subsequent field guide. Because an undescribed species was identified as *P. sanluisii* in *Orchids of Venezuela, An Illustrated Field Guide*, this species was thought to be unnamed, and consequently it was redescribed in Dunsterville's honor.

Pleurothallis sanluisii is characterized by a loose raceme of small, dotted, long-pedicellate flowers that more or less equals or surpasses the ovate leaf. The petals are decurved and subsigmoid. A small, conical callus is present above the base of the lip between erect, rounded lateral lobes. Vegetatively, *P. longipedicellata* is similar, but the flowers are unspotted, the petals are not decurved, and the lip does not have erect, rounded lateral lobes with a conical callus between. The undescribed species has narrower leaves, shorter racemes, widely expanded, narrower petals, and a transversely ovate lip without a conical callus.

Pleurothallis stricta Luer, Selbyana 5: 181, 1979.

Ety.: From the Latin *strictus*, "straight," referring to the inflorescence.

Plant medium in size to large, epiphytic, caespitose, roots slender. Ramicauls slender, erect, 3-12 cm long, enclosed below the middle by a closely fitting tubular sheath, and 2-3 sheaths at the base. **Leaf** erect, coriaceous, elliptical-ovate, acute to subacute, 5-9.5 cm long, 1.8-2.7 cm wide, the base cuneate, sessile. **Inflorescence** an erect, loose, distichous, simultaneously few- to several-flowered raceme 5-16 cm long including the peduncle 3-5 cm long, subtended by a spathe 0.8-1 cm long; floral bracts thin, tubular, 3 mm long; pedicels 5-15 mm long; ovary 2 mm long; **sepals** yellowish, heavily overlaid with purple, especially along the veins, membranous, glabrous, the dorsal sepal narrowly ovate, acute, acuminate, concave below the middle, 9-12 mm long, 3.5 mm wide expanded, 3-veined, the lateral sepals connate into a narrowly triangular, acute, minutely bifid lamina, 9.5-13 mm long, 2.5-3.5 mm wide, 4-veined; **petals** purple with yellow margin, elliptical, oblique, acute, with the margins minutely denticulate, 5-6 mm long, 1 mm wide; **lip** dull tan, suffused with purple, thick, ovate-trilobed, 1.75-2 mm long, 1.5 mm wide, acute at the apex with minutely serrulate margins, the basal lobes broadly rounded, erect, flanking the column, the disc with an elevated, central glenion, the base truncate-concave, hinged to the column-foot; column purple, stout, 1.5 mm long, the anther and stigma apical, the foot thick with the apex of the column.

ECUADOR: **Zamora-Chinchipe**: above Valladolid, alt. ca. 2500 m, collected July 1975 by W. Teague, L. Figueroa & D. Welisch, cultivated by Teague in San Francisco, CA, 20 Aug. 1979, *C. Luer 4113* (Holotype: SEL).
COLOMBIA: **Antioquia**: near Tuza, 15 Nov. 1886, 15 Nov. 1886, *F.C. Lehmann 2161* (K). **Tolima**: Inzá, alt. 1800 m , 15 Nov. 1882, *F.C. Lehmann 2167* (K); near Medellín, cultivated by Colomborquídeas, 15 Dec. 1992, *R. Escobar 5040* (MO). **Cundinamarca**: San Antonio de Tena, Santandercito, alt. 2000-2500 m, cultivated at La Ceja by M. & O. Robledo, 21 July 1978, *C. Luer 2937* (SEL).

This species is found occasionally in the Andes of Colombia and Ecuador. It is closely related to *P. rowleei*, but it is distinguished by the straight, erect, lax raceme of smaller, more or less purple-striped flowers that surpasses the narrowly elliptical-ovate leaf. The dorsal sepal is acuminate, the synsepal is narrowly triangular; the petals are elliptical and serrate; and the lip is thickly triangular with broadly rounded, erect basal lobes, acute at the tip, and with an elevated glenion.

Pleurothallis supervacanea Rchb.f., Hamburger Garten-Blumenzeitung 16: 180, 1860.

Ety.: From the Latin *supervacaneus*, "empty, or vacant, above," no doubt Reichenbach's cryptic admission that the apical portion of the lip is missing.

Syn.: *Pleurothallis apoxys* Luer & Escobar, Orquideología 14: 132, 1981.
Ety.: From the Greek *apoxys*, "tapering to a point," referring to the acuminate sepals and petals.

Plant medium in size to large, epiphytic, caespitose; roots comparatively coarse. Ramicauls stout, erect, 10-20 cm long, enclosed below the middle by a closely fitting tubular sheath, and 2-3 sheaths at the base. **Leaf** erect, coriaceous, ovate, acute, 10-13 cm long, 4-4.5 cm wide, the base sessile, broadly cuneate to rounded. **Inflorescence** a loose, distichous, simultaneously several-flowered raceme 12-20 cm long including the peduncle 5-6 cm long, subtended by a reclining spathe 3-4 cm long; floral bracts thin, infundibular, 5-6 cm long; pedicels 8-20 cm long; ovary 3 mm long; **sepals** light greenish yellow-brown, membranous, glabrous, the dorsal sepal ovate, acute, acuminate above the middle, concave below the middle, 13-15 mm long, 3.5-4 mm wide, 3-veined, the lateral sepals connate into an ovate, acute, cymbiform lamina, 12-15 mm long, 4-5 mm wide unexpanded, 4-veined; **petals** light yellow with light red mottling, narrowly linear-ovate, oblique, acute, attenuate, with the margins fimbriate, 11-12 mm long, 1-1.2 mm wide, 3-veined; **lip** green, striped and mottled in purple, ovate-subtrilobed, thick, with the margins erect and obtuse below the middle, narrowed above the middle with the apex acute, 5 mm long, 2 mm wide below the middle, the disc with a low, rounded callus within the margins below the middle, and a curved, transverse callus above the base, the base hinged to the rudimentary column-foot; column semiterete, stout, 2.5 mm long, the anther and stigma apical, the foot thick, obsolescent.

COLOMBIA: **Antioquia**: flowered in cultivation in Hamburg, ca. 1859, probably collected near Medellín by *Patin s.n.* (Holotype: W); Munic. of Medellín, Cerro de Padre Amaya, alt. 2500-2700 m, collected by R. Escobar 936 et al., flowered in cultivation by M. & O. Robledo at La Ceja, 19 Oct. 1977, *C. Luer 2087* (holotype of *P. apoxys*: SEL; isotype: JAUM); flowered in cultivation by M. & O. Robledo at La Ceja, 19 Mar. 1989, *C. Luer 14267* (MO). **Chocó**: cloud forest south of the pass between Urrao and Carmen de Atrato, alt. 2700 m, 30 May 1995, *C. Luer, J. Luer, R. Escobar et al. 17631* (MO).

Pleurothallis supervacanea was described from a plant cultivated by Herr Stange in the collection of Consul Schiller in Hamburg. Most likely it had been collected near Medellín, Colombia, by Patin because what appears to be a duplicate specimen bears that information on the herbarium sheet.

A similar specimen collected by Wallis near Medellín and annotated as *P. supervacanea* by Garay has been sketched on another sheet and similarly annotated by Garay. The sketch of a petal and the lip are referable to the original description of *P. supervacanea*, but a complete, hydrated flower from this specimen reveals it to be *P. alvaroi*, described in 1981.

A complete, hydrated flower from Patin's collection reveals it to be a different species, the same species described as *P. apoxys*, also in 1981. These two similar, closely related species were confused and mixed by Reichenbach. His *P. supervacanea* far supersedes the epithet *P. apoxys* by well over a century.

The mysterious meaning of the epithet *supervacanea* probably is Reichenbach's private joke referring to the lip. In the Latin diagnosis he states: *labello ovati retuso apice minute tridentato* (lip ovate with the apex retuse, minutely tridentate), and the illustration clearly supports this description as well as the narrowly acuminate petal. The anterior half of the lip appears to have been eaten or broken off. He seems to have taken the trouble to check a second flower, because in a concluding remark he states: *Bis auf den Lippenbau mit* Pleurothallis pedunculata *völlig übereinstimmend* (. . . lip in complete agreement with *P. pedunculata*).

Indeed, the lips of these two species are similar in outline, but the lip of *P. supervacanea* possesses the diagnostic pair of calli within the dilated lower margins as seen in *P. apoxys* and not on the lip of *P. pedunculata*. An exception to subsect. *Acronia*, the spathe of the confused *P. supervacanea* is as large and prominent as the spathe of *P. pedunculata* in subgen. *Rhynchopera*.

Pleurothallis tryssa Luer, Selbyana 1: 303, 1975.

Ety.: From Greek *tryssos*, "dainty," referring to the appearance of the flowering plant.

Plant small, epiphytic, caespitose; roots very slender. Ramicauls very slender, erect to suberect, 5-12 cm long, with a thin, tubular sheath below the middle and another at the base. **Leaf** suberect to spreading, thinly coriaceous, ovate, acute, 3-6 cm long, 1.5-2.5 cm wide, the base sessile, rounded to subcordate. **Inflorescence** a delicate, flexible, loose, several-flowered raceme 6-8 cm long including the peduncle, borne from a 5 mm long spathe at the base of the leaf; floral bracts infundibular, 1.5-2 mm long; pedicels 1.5-2 mm long; ovary 1 mm long; **sepals** translucent light green, yellow, brown or purple, sometimes spotted with red-brown, subcarinate, glabrous, the dorsal sepal ovate, acute, lightly acuminate, concave in the lower third, 4-6 mm long, 1.5-1.75 mm wide unexpanded, the lateral sepals completely connate into a concave, ovate, narrowly obtuse synsepal, 4-6 mm long, 2 mm wide; **petals** fleshy, colored as the sepals, entire, linear to linear-ovate, acute, attenuate, 3.75-5 mm long, 0.25-0.6 mm wide, 1-veined (occasionally with incomplete, additional veins); **lip** green, red, red-brown or purple, trilobed, the blade 1.5 mm long, 0.75 mm wide, the lateral lobes basal, erect, flanking the column, obtuse to narrowly obtuse, the apical lobe ovate, obtuse, acutely acuminate, the base truncate, deflexed into a broad claw, hinged to the base of the column; **column** semiterete, 0.75-1 mm long, the anther and stigma apical, the foot obsolescent.

ECUADOR: **Pichincha**: along the new road between Quito and Santo Domingo, alt. 1500 m, 1 Mar. 1975, *C. Luer & R. Kent 223* (Holotype: SEL); same area, alt. 1400 m, 1 Feb. 1963, *C.H. Dodson & L. B. Thien 2210* (SEL); below Chiriboga, alt. 1400 m, 3 July 1967, *C.H. Dodson, N.H. Williams & R.M. Adams 3805* (SEL); Santa Rosa de Toachi, alt. 1400 m, Mar. 1990, *A. Hirtz, X. Hirtz & K.H. Baumann 4668a* (MO); between Chacayaca above Nanegal, alt. 400-1000 m, undated, *F.C. Lehmann 4512* (K); between San Miguel de los Bancos and Mindo, alt. 1450 m, 1 Apr. 1984, *C. Luer, S. Dalström, T. Höijer & A. Hirtz 9861* (MO). **Esmeraldas**: west of Lita toward San Lorenzo, alt. 750 m, 18 Jan. 1987, *C. Luer, J. Luer, C. Dodson & A. Hirtz 12366, 12394* (MO); between Lita and Alto Tambo, cult. in Chamblee, GA, *F L Stevenson 91-1029-10* (MO). **Imbabura**: between Santa Rosa and Cachabi, alt. 1250 m, 19 Jan. 1987, *C. Luer, J. Luer, C. Dodson & A. Hirtz 12435* (MO); Los Cedros reserve, alt. 1400 m, 23

Jan. 1993, *S. Dalström, T. Höijer & H. Wanntorp 1744* (MO). **El Oro**: near Piñas, 1989, cult. in Chamblee, GA, *F L Stevenson 90-0511-1* (MO).
COLOMBIA: **Nariño**: Gueshí, *F.C. Lehmann s.n.* (K,HK 123); around Coteje on Río Timbuquí, Nov. 1898, *F.C. Lehmann s.n., HK 127* (K); La Planada above Ricaurte, alt. 1800 m, 25 Jan. 1987, *C. Luer, J. Luer & R. Escobar 12500* (MO); Altaquer, alt. ca. 1600 m, collected by E. Valencia, cult. at Colomborquídeas, 5 Jan. 1993, *R. Escobar 5233* (MO).

This species, found relatively frequently on the western slopes of southern Colombia and Ecuador, was first collected by Lehmann in the nineteenth century. It is distinguished by the very delicate raceme of fragile, little flowers that hangs over the edge of the thin, ovate leaf. The acute sepals are found in various colors with or without spots throughout its range. The petals are usually narrowly linear, but occasionally slightly broader leaves with an additional, incomplete vein are seen. The basal lobes of the tiny lip flank the column.

Pleurothallis vieirae Luer & Escobar, Orquideología 14: 182, 1981.
Ety.: Named in honor of Luis Carlos Vieira of Medellín, Colombia, co-collector of this species.

Plant small to medium in size, epiphytic, caespitose; roots slender. Ramicauls erect, terete, very slender, 6-10.5 cm long, with a close tubular sheath below the middle and another at the base. **Leaf** erect, coriaceous, linear-ovate, acute, 7-11 cm long, 9-10 mm wide, the base cuneate, sessile. **Inflorescence** a weak, suberect, flexuous, loosely 2- to 3-flowered raceme 4-5 cm long including the peduncle 2-3 cm long, from a 5-8 mm long spathe at the base of the leaf; floral bract 3 mm long; pedicel 10 mm long; ovary 4 mm long; **sepals** translucent pale rose with purple stripes along the veins, the dorsal sepal ovate, acuminate from near the middle to the narrowly acute apex, 12 mm long, 4.5 mm wide, 3-veined, the lateral sepals connate into an ovate, acute lamina 11 mm long, 5.5 mm wide, 4-veined; **petals** descending, elliptical-subfalcate, oblique, acute, 9.5 mm long, 3 mm wide, 3-veined; **lip** green, thick, triangular, 3 mm long, 2 mm wide, the apex subacute, the basal angles subacute, erect, the glenion well-developed; **column** stout, 1 mm long, with a broad, thick foot.

COLOMBIA: **Chocó**: Munic. of Bahia Solano, alt. 200-300 m, 1977, collected by G. Misas, L.C. Vieira et al., cultivated by Vieira in Medellín, flowered in cultivation 15 Oct. 1977, *C. Luer 2037* (Holotype: SEL; Isotype: JAUM).

This handsome species from lowland, coastal Colombia, is closely allied to *P. luctosa* and *P. rowleei*, but it differs primarily in the prominently striped sepals, and the petals with entire margins. In addition, the leaves are very narrow and the inflorescence bears only two or three flowers in a loose, flexuous raceme.

Pleurothallis volcanica Luer, Selbyana 3: 406, 1977.
Ety.: Named for El Hato del Volcán, Chiriquí, near where this species was collected.

Plant small to medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, terete, 4-14 cm long, with a closely fitting tubular sheath below the middle and 1-2 others at the base. **Leaf** coriaceous, erect to spreading, ovate, acuminate, acute, the base broadly cuneate to rounded, sessile, 4-8 cm long, 1.5-3 cm wide. **Inflorescence** a weak, suberect, laxly several-flowered (5-11), secund raceme, 5-14 cm long, including the peduncle 3-4 cm long, from a slender spathe 5-14 mm long at the base of the leaf; floral bracts 1.5 mm long; pedicels 4-9 mm long; ovary 1 mm long; **sepals** pale rose, glabrous, the dorsal sepal ovate, acuminate, acute, concave, 3.5-4 mm long, 2.5 mm wide, 3-veined, the lateral sepals connate into an ovate, acuminate, acute, minutely emarginate synsepal, similar to the dorsal sepal, 3.25-4 mm long, 2.5 mm wide, 4-veined; **petals** pale orange, linear-oblong, oblique, acute, thickened, entire, 2.5-3 mm long, 0.5 mm wide; **lip** pale yellow, sagittate-trilobed, genuflexed near the middle, the apical lobe narrowly triangular, acute, the lateral lobes broadly subquadrate, incurved, the base deeply concave, the disc with a well-developed glenion near the middle, 1.5 mm long; 1.5 mm wide; **column** stout, 1.5 mm long, with a bulbous foot.

PANAMA: **Chiriquí**: epiphytic in cloud forest near Río Chiriquí west of El Hato del Volcán, alt. 1500 m, 12 Sept. 1976, cultivated 18 Oct. 1976, *C. Luer & H. Butcher 1260* (Holotype: SEL); on road-cut, Silla de Cerro Pando, west of El Hato del Volcán, 30 Nov. 1964, *R.L. Dressler 2962* (SEL).
COSTA RICA: **Cartago?**: El General valley, 12 June 1955, *C.H. Lankester 1656* (AMES), C. Luer illustr. 16523.

Although obviously closely allied to *P. longipedicellata* and *P. rowleei*, this species is distinct in the thrice smaller flowers with entire petals. The flowers are not much smaller than those of *P. dentipetala*, from which it is distinct in the longer pedicels as well as the smaller habit and entire petals.

Pleurothallis volcanica is recognized by its slender ramicauls; ovate, acuminate leaves; and very small, pastel-colored, relatively long-pedicellate flowers borne in a loose raceme that exceeds the leaf nearly twice its length. The concave, acuminate dorsal sepal and synsepal spread to expose the minute lip flanked by entire, extended petals. The petals of all the related species are denticulate or ciliate.

SERIES *AMPHYGIAE*

Pleurothallis allenii L.O.Williams, Ann. Missouri Bot. Gard. 27: 275, 1940.

Ety.: Named in honor of Paul H. Allen, co-author of the Orchidaceae of the *Flora of Panama*, who collected this species.

Plant small to medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 3.5-5 cm long, with a close, tubular sheath below the middle and another 1-2 at the base. **Leaf** coriaceous, erect, narrowly elliptical, acute, sessile, 3.5-8 cm long, 0.5-0.8 cm wide, narrowly cuneate below into the base. **Inflorescence** a solitary flower borne by a slender peduncle 12-13 mm long, from a spathe 4-5 mm long, at the base of the leaf; floral bract 6-8 mm long; pedicel 3-4 mm long; ovary 4 mm long; **sepals** and petals purple with yellowish margins, glabrous, the dorsal sepal narrowly ovate, acute, slightly acuminate, 15 mm long, 5 mm wide, 3-veined, the lateral sepals connate completely into a similar synsepal, 14 mm long, 5 mm wide, 4-veined; **petals** elliptical-subsigmoid, acute, slightly acuminate, with minutely denticulate margins, 11.5 mm long, 2.5 mm wide, 1-veined; **lip** yellow with red hairs and spicules, triangular-trilobed, thick, 4 mm long, 4 mm wide across the basal lobes expanded, the apex red-spiculate, acute, the basal lobes rounded, incurved, the disc with a transverse, curved, cellular-pubescent callus in the center, the base subtruncate, flat on the end, hinged to the base of the column; column terete, stout, 2 mm long, the anther and transverse stigma apical, the foot rudimentary.

PANAMA: **Coclé**: vicinity of El Valle, alt. 600-1000 m, 8 Dec. 1938, *P. H. Allen 1240* (Holotype: MO; Isotype: AMES); hills north of El Valle, alt. ca. 1000 m, 21 Jan. 1941, *P. H. Allen 2338* (AMES, MO); same area, El Valle, alt. ca. 1000 m, collected Sept. 1977, flowered in cultivation, Nov. 1977, *C. Luer 2254* (SEL).

This species is endemic in a small area of central Panama. It is characterized by the small habit, narrow leaves, and a single, proportionately large, gaping, purple flower with the floral parts edged in yellow. The dorsal sepal and synsepal are similar, spreading in opposite directions exposing the large, forwardly directed, minutely erose petals. The lip is red, triangular, acute and spiculate at the apex, with rounded basal lobes and a curved, pubescent callus in the center of the disc.

Pleurothallis amphigya Luer & Escobar, Orquideología 14: 128, 1981.

Ety.: From the Greek *amphigyos*, "pointed at both ends," referring to the narrowly acuminate sepals.

Plant small to medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 3-10 cm long, with a thin, tubular sheath below the middle and 2-3 others above the base. **Leaf** coriaceous, erect, ovate to narrowly ovate, acute, 4-8 cm long, 0.6-1.8 cm wide, cuneate below into the sessile base. **Inflorescence** a fascicle of single-flowered peduncles borne from a spathe 3-4 mm long, at the base of the leaf; peduncles 10-17 mm long; floral bract 3-4 mm long; pedicel 3-4 mm long; ovary 3 mm long; **sepals** and petals purple, glabrous, the dorsal sepal ovate at the base, concave, 20-30 mm long, 4 mm wide, 3-veined, the apex acute, long-attenuate with involute margins, the lateral sepals connate completely into a similar synsepal, 20-32 mm long, 3.5-5 mm wide, 4-veined; **petals** descending in the natural position, elliptical-ovate or subsigmoid, oblique, acute, slightly acuminate, 8-10 mm long, 2-2.5 mm wide, 3-veined, minutely ciliate; **lip** purple, triangular-trilobed, acute, 2-3 mm long, 1.5-2.5 mm wide, the basal angles rounded, incurved, the disc with a well-developed glenion, the base subtruncate, flat on the end, hinged to the base of the column; column stout, semiterete, 2 mm long, the anther and transverse stigma apical, the foot rudimentary.

COLOMBIA: **Cundinamarca?**: without locality, flowered in cultivation by Padre S. Restrepo at El Retiro, 15 Oct. 1977, *C. Luer 2046* (Holotype: SEL). **Cauca**: Quebraditas near Popayán, collected by J. Kuhn & R. Escobar, cultivated at J & L Orchids, Aug. 1978, *C. Luer 5216* (SEL). **Chocó**: San José del Palmar, Cerro del Torrá, alt. 2500 m, 20 Aug. 1988, *P. Silverstone-Sopkin, N. Paz, R.T. González, J.E.*

Ramos, L.H. Ramos & A. Henao 4581, 4582 (CUVC). **Valle del Cauca**: El Cairo, Cerro del Inglés, Sarranía de los Paraguas, alt. 2400 m, 30 Dec. 1986, *P. Silverstone, N. Paz, R.T. González, I. Cabrera & D. Garcés 2747* (CUVC).

This small species, widely distributed in Colombia, is basically similar to the other species of the series. The leaves vary from narrowly elliptical to ovate; the long-attenuated dorsal sepal and synsepal spread in opposite directions, and the subsigmoid, ciliate petals descend. The lip is small and acutely triangular.

Pleurothallis annectens Luer, Selbyana 3: 240, 1977.

Ety.: From the Latin *annectens*, "linking, connecting," suggesting a link between the single-flowered species of series *Amphigyae* and the racemose species of series *Acroniae*.

Plant small to medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 5-10 cm long, with a thin, tubular sheath below the middle and 2-3 others above the base. **Leaf** thinly coriaceous, suberect, ovate, acute, sessile, 4-7 cm long, 2-3 cm wide, the base rounded to shallowly cordate. **Inflorescence** a fascicle of solitary-flowered peduncles borne from a spathe 3-4 mm long, at the base of the leaf; peduncles 15-25 mm long; floral bract 3 mm long; pedicel 5-6 mm long; ovary 2 mm long; **sepals** and petals translucent yellow, suffused and flecked with red, glabrous, the dorsal sepal ovate, concave, 4-5 mm long, 2.75-3 mm wide, 3-veined, the apex subacute, shortly acuminate, the lateral sepals connate completely into a similar synsepal, 4-5 mm long, 3.5-4 mm wide, 4-veined; **petals** descending in the natural position, elliptical-ovate or subsigmoid, oblique, acute, slightly acuminate, 4-5 mm long, 1.5 mm wide, 3-veined, with subdenticulate margins; **lip** yellow, flecked with red, triangular-trilobed, acute, 2 mm long, 2 mm wide expanded, the basal angles broadly rounded, incurved around the column, the disc with an ill-defined thickening, the base truncate, hinged to the base of the column; column stout, semiterete, 1.5 mm long, the anther and transverse stigma apical, the foot rudimentary.

PANAMA: **Chiriquí**: epiphytic in cloud forest along the continental divide above Camp Escopeta, Cerro Colorado, alt. 1700 m, 16 Feb. 1977, *C. Luer, J. Luer & R.L. Dressler 1583* (Holotype: SEL).

This species, apparently endemic in western Panama, is basically similar to the other species of the subsection. It is closely related to *P. archicolonae* with two-flowered peduncles from eastern Panama. The leaves are ovate and acute, and the flowers are produced successively from single-flowered peduncles in a fascicle from the base of the leaf. The dorsal sepal and similar synsepal are yellow and flecked with red, concave and shortly acuminate. The petals are sigmoid. The lip is broadly trilobed with the rounded, basal lobes erect and the apex acute.

Pleurothallis archicolonae Luer, Selbyana 3: 52, 1976.

Ety.: Named for Cerro Jefe, literally translated into Greek, where the species was collected.

Plant small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 3-6 cm long, with a thin, tubular sheath below the middle and 2-3 others above the base. **Leaf** coriaceous, erect, linear-elliptic, acute, sessile, 3-8.5 cm long, 0.8-1 cm wide, narrowly cuneate below into the base. **Inflorescence** a fascicle of 1- or laxly 2-flowered inflorescences borne from a spathe 2-3 mm long, at the base of the leaf; peduncles 10-13 mm long; floral bract 2 mm long; pedicel 5 mm long; ovary 2 mm long; **sepals** and petals translucent yellow, striped with red, glabrous, the dorsal sepal ovate, concave, 4-5 mm long, 3 mm wide, 3-veined, the apex obtuse, shortly acuminate, the lateral sepals connate completely into a similar synsepal, 4-5 mm long, 3 mm wide, 4-veined; **petals** translucent yellow with 3 red stripes, descending in the natural position, elliptical-oblong, subsigmoid, oblique, acute, 3 mm long, 1.25 mm wide, 3-veined, with subdenticulate margins; **lip** yellow with purple stripes beneath, triangular-trilobed, subacute, 1.5 mm long, 2.25 mm wide expanded, the basal angles broadly rounded, erect, the disc with a low, triangular callus, the base truncate, hinged to the base of the column; column stout, semiterete, 1.5 mm long, the anther and transverse stigma apical, the foot rudimentary.

PANAMA: **Panamá**: epiphytic in cloud forest on Cerro Jefe, alt. 1000 m, 2 Mar. 1976, *C. Luer, J. Luer, P. Taylor & H. Butcher 964* (Holotype: SEL); same area, 19 Nov. 1967, *R.L. Dressler 3175* (SEL); same area, 6 Jan. 1968, *R.L. Dressler 3328* (SEL). **Colón**: Río Iguanita, Mar. 1976, *N.H. Williams 5273* (SEL).

This species, apparently endemic in eastern Panama, is basically similar to the other species of the subsection. It is similar to *P. annectens* from western Panama,

but the narrowly elliptical leaves easily distinguish it from the former. Similar to the former, the peduncles are produced in a fascicle at the base of the leaf. The flowers are usually produced singly but occasionally a second flower appears as a loosely two-flowered raceme. The dorsal sepal and similar synsepal are yellow, striped or mottled in red, concave and shortly acuminate. The petals are sigmoid. The lip is broadly trilobed with the rounded basal lobes erect, and the apex obtuse.

Pleurothallis bucranon Luer & Hirtz, Lindleyana 3: 134, 1988.

Ety.: From the Greek *boutranon*, "a skull of a cow," referring to the appearance of the lip.

Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls very slender, erect, round in cross section, 5-8 cm long, with close, tubular sheaths above the base. **Leaf** thinly coriaceous, subspreading, sessile, ovate, 3.5-5.5 cm long, 1.2-1.8 cm wide, the apex acute, the base shallowly cordate. **Inflorescence** a fascicle of solitary, successive flowers borne from a prostrate spathe 3-4 mm long, at the base of the leaf; peduncles 4-5 mm long; floral bract 4 mm long; pedicel 5 mm long; ovary 4 mm long; **sepals** and petals dark red, the dorsal sepal narrowly ovate, acute, convex, 11 mm long, 4 mm wide unexpanded, 3-veined, the lateral sepals connate completely into a similar synsepal, 11 mm long, 5 mm wide, 4-veined; **petals** dark red basally, light red apically, sigmoid, acute, 9 mm long, 2 mm wide, 3-veined, minutely ciliate; **lip** red, three-lobed, acutely deflexed near the middle, 2.5 mm long, 2.5 mm wide across the lateral lobes, the middle lobe narrowly oblong, 0.5 mm wide, minutely verrucose, acute, the lateral lobes expanded, narrowly acute, falcate, the deflexed basal portion oblong, truncate, 1 mm broad and long, microscopically pubescent, firmly hinged to the base of the column; column cylindrical, 2 mm long, the anther and single-lobed stigma apical, the foot rudimentary.

ECUADOR: **Imbabura**: epiphytic in wet forest south of Lita, alt. 1250 m, 19 Jan. 1987, *C. Luer, J. Luer, A. Hirtz, C. H. Dodson, D. Benzing & D. Bermudes 12437* (Holotype: MO).

This species is most similar to Colombian *Pleurothallis forceps-cancri*, but it differs in the less acuminate apices of the petals, and especially in the three-lobed lip, markedly deflexed near the middle, verrucose above the middle, with the lateral lobes being narrowly falcate.

Pleurothallis cauda-phocae Luer & Hirtz, Lindleyana 3: 137, 1988.

Ety.: From the Latin *cauda-phocae*, "the tail of a seal," in allusion to the callus of the lip.

Plant medium in size, epiphytic, caespitose; roots slender, densely fasciculate. Ramicauls slender, erect, round in cross section, 5-10 cm long, with close, tubular sheaths above the base. **Leaf** erect, coriaceous, ovate, acute, 3-4.2 cm long, 1.4-2.3 cm wide, the base rounded, sessile. **Inflorescence** a fascicle of solitary, successive flowers borne from a prostrate spathe 5 mm long, from the base of the leaf; peduncles 22-35 mm long; floral bract 3 mm long; pedicel 4-6 mm long; ovary 4 mm long; **sepals** yellow-green with brown dashes, the dorsal sepal ovate, acuminate, acute, concave in the lower two-thirds, 9 mm long, 4 mm wide unexpanded, 3-veined, the lateral sepals connate into an ovate, acuminate, acute synsepal, 9 mm long, 5.5 mm wide, 4-veined; **petals** falcate, minutely ciliate, the distal quarter abruptly acuminate-acute, 8 mm long, 2.5 mm wide, 3-veined; **lip** yellow, brown centrally, triangular-trilobed, 3 mm long, 4.5 mm wide across the lateral lobes expanded, the apex apiculate, the disc with a prominent, 2-winged callus above the middle, 1.25 mm in diameter, the basal lobes triangular, acuminate, acute, the base subtruncate with a glenion, acutely reflexed, firmly hinged to the base of the column; column cylindrical, 2 mm long, the anther and single-lobed stigma apical, the foot rudimentary.

ECUADOR: **Imbabura**: epiphytic in wet forest south of Lita, alt. 1250 m, 19 Jan. 1987, *C. Luer, J. Luer, A. Hirtz, C. H. Dodson, D. Benzing & D. Bermudes 12429* (Holotype: MO).

This species is characterized by ovate, acute leaves and slender ramicauls. The long-pedicellate, solitary flowers are borne in a fascicle at the base of the leaf. The dorsal sepal and synsepal are concave and acuminate; the petals are large and falcate; the lip bears a prominent, protruding, two-winged callus. Pointed basal lobes are to either side of the cylindrical, essentially footless column.

Pleurothallis forceps-cancri Luer & Escobar, Orquideología 14: 144, 1981.

Ety.: From the Latin *forceps*, "pincers" and *cancri*, "of a crab," in allusion to the flowers.

Plant small to medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 7-15 cm long, with a thin, tubular sheath below the middle and 2-3 others above the base. **Leaf** coriaceous, spreading, ovate, acute, 5-6.5 cm long, 2-2.5 cm wide, the base sessile, shallowly cordate. **Inflorescence** a single flower produced successively, peduncles 15 mm long, borne from a spathe 6-10 mm long, at the base of the leaf; floral bract 4 mm long; pedicel 4 mm long; ovary 3 mm long; **sepals** rose-orange, membranous, glabrous, the dorsal sepal ovate at the base, concave, acute, acuminate, 20 mm long, 5 mm wide, 3-veined, the lateral sepals connate completely into an ovate synsepal, acute, acuminate, 16 mm long, 6 mm wide, 4-veined; **petals** descending in the natural position, orange, minutely ciliate, elliptical-subsigmoid, oblique, acute, acuminate, 18 mm long, 4 mm wide, 3-veined; **lip** red-orange, triangular-trilobed, narrowly obtuse, 2.5 mm long, 2.5 mm wide, the basal angles erect, narrowly rounded, flanking the column, the disc with an ill-developed glenion, the base reflexed subtruncate, flat on top, hinged to the base of the column; column red, stout, semiterete, 2 mm long, the anther and transverse stigma apical, the foot rudimentary.

COLOMBIA: Without collection data, cultivated by J & L Orchids, Easton, CT, 16 Feb. 1976, *C. Luer 612A* (Holotype: SEL). **Chocó**: San José del Palmar, Galápagos, alt. 2000 m, collected by E. Valencia, cultivated at Colomborquídeas, 2 Jan. 1993, *R. Escobar 5163* (MO).

This species is apparently uncommon in the Western Cordillera of Colombia. It is closely related to *P. amphygia* and *P. quadricaudata*, being distinguished from them by the broad petals that are long-acuminate above the middle.

Pleurothallis forceps-cancri is characterized by the orangish, long-acuminate dorsal sepal and synsepal, and the orange, sigmoid-shaped, long-acuminate petals that cross in from of the flower, suggesting a pair of boiled crab-claws. The lip is small and triangular with the angles narrowly obtuse.

Pleurothallis fugax Luer & Escobar, Orquideología 14: 146, 1981.

Ety.: From the Latin *fugax*, "fugacious," referring to the ephemeral flowers.

Plant small, epiphytic, caespitose; roots slender. Ramicauls erect, slender, terete, 4-18 cm long, with a close, tubular sheath below the middle and 1-2 sheaths at the base. **Leaf** erect, coriaceous, narrowly elliptical-ovate, acute, 4-10 cm long, 7-18 mm wide, the base cuneate, sessile. **Inflorescence** a solitary, pendent, long-pedunculate, non-resupinate, delicate, short-lasting flower borne successively in a fascicle from a 5-10 mm long spathe at the base of the leaf; peduncle weak, filiform, 18-25 mm long; floral bract thin, 3 mm long; pedicel 4-5 mm long; ovary green with purple spots, 2-3.5 mm long; **sepals** and petals transparent white to greenish white with rose to brown spots, the middle sepal ovate, concave, acuminate, acute, 7-9.5 mm long, 3.5 mm wide, the lateral sepals connate into an ovate, concave, acute synsepal, 7-8.5 mm long, 4-5 mm wide expanded; **petals** narrowly ovate, acuminate, acute, ciliate, 7-8 mm long, 1.5-2 mm wide; **lip** uppermost, yellowish white with purple dots, cordate-trilobed, 1.5-4 mm long, 3.5 mm wide expanded, the anterior lobe subacute, the lateral lobes oblong-rounded, incurved, the disc with a small pyramidal callus near the base; **column** stout, 1-2 mm long, with an obsolescent foot.

COLOMBIA: **Antioquia**: Munic. of El Carmen, Partidas de San Lorenzo, alt. 2520 m, 29 Jan. 1978, *C. Luer, J. Luer & R. Escobar 2352* (Holotype: JAUM: Isotype: SEL); epiphytic, highlands of Santa Rosa de Osa, alt. 1800-2300 m, Sept. 1891, *F.C. Lehmann 7077* (K); above Yarumal, Raton Pelado, alt. 1650 m, 1 May 1984, *C. Luer, J. Luer, R. Escobar & E. Valencia 10055* (MO); near Yarumalito, northeast of Santa Rosa de Osa, alt. 2350 m, 15 May 1985, *R. Escobar, R. Escobar & E. Valencia 11388* (MO); north of Santa Rosa, above Estadero Manicomio, alt. 2580 m, 14 Mar. 1989, *C. Luer, J. Luer, S. Dalström & W. Teague 14142* (MO); road from San Antonio de Prado to Heliconia, Alto de El Chuzcal, alt. 2300 m, collected by O.J. Arango, 1973, cult. by him at La Estrella, 30 Jan. 1974, *R. Escobar 1127* (JAUM); El Carmen, above San Lorenzo, alt. 2500 m, 21 Mar. 1989, *C. Luer, J. Luer & W. Teague 14344* (MO); La Unión, alt. 2400 m, collected by E. Valencia, cult. at Colomborquídeas, 2 Jan. 1993, *R. Escobar 5161* (MO); La Horqueta, collected by Pacho López, cult. at Colomborquídeas, 23 May 1995, *C. Luer 17614* (MO); Cerro Padre Amaya, alt. 2900 m, 16 Jan. 1979, *C. Luer, J. Luer & R. Escobar 3692* (SEL); north of the pass between Urrao and Carmen de Atrato, alt. 2700 m, 30 May, 1995. *C. Luer, J. Luer, R. Escobar et al. 17637* (MO); Frontino, Alto de Musinga, alt. 2000 m, collected by O.J. Arango & G. Misas, 11 April 1974, *R. Escobar 1075* (JAUM); Caldas, Morro Gil, alt. 2450 m, Nov. 1973, *R. Escobar, O.J. Arango, G. Misas et al. 1050* (JAUM).

This species is common in the department of Antioquia in the Central Cordillera of Colombia, but it is not known from elsewhere. It was painted for Mutis in the eighteenth century, and collected in the nineteenth century by Lehmann. The delicate, pale greenish flowers are dotted with rose. The lip is transversely reniform with a small, conical callus at the base.

Pleurothallis glochis Luer & Escobar, Orquideología 14: 150, 1981.

Ety.: From the Greek *glochis*, "an arrow-point," referring to the shape of the lip.

Plant small, epiphytic, caespitose; roots slender. Ramicauls erect, slender, terete, 4-9 cm long, with a close, tubular sheath below the middle and 1-2 others at the base. **Leaf** erect, coriaceous, ovate, acute, acuminate, 3.5-6 cm long, 1.5-2.5 cm wide, the base broadly cuneate to rounded, sessile. **Inflorescence** a fascicle of single, successive, erect, long-pedunculate flowers borne from a reclining spathe 5 mm long at the base of the leaf; peduncles 15-23 mm long; floral bract 4-5 mm long; pedicel 3.5 mm long; ovary 3.5 mm long; **sepals** yellow, membranous, the dorsal sepal ovate, concave, acute, 7 mm long, 4 mm wide, 3-veined, the lateral sepals connate into a broadly ovate, deeply concave, obtuse synsepal 7 mm long, 6 mm wide, 4-veined; **petals** yellow, broadly ovate, narrowly obtuse, 4.5 mm long, 3.25 mm wide, shortly pubescent, 3-veined; **lip** ovate-bilobed, 4.25 mm long, 3 mm wide across the lateral lobes expanded, the anterior lobe triangular, acute, glandular-cellular, the lateral lobes below the middle, erect, rounded, embracing the column, the base broadly unguiculate, concave, the disc with a transverse, elevated fold between the lateral lobes, concave above and below; **column** terete, 2 mm long, footless.

COLOMBIA: **Nariño**: epiphytic in cloud forest near the pass between Pasto and La Cocha, alt. 3000 m, 21 Jan. 1979, *C. Luer & J. Luer 3735* (Holotype: SEL).
ECUADOR: **Loja**: Parqué Nacional de Podocarpus, alt. 2750 m, 25 July 1985, *C. H. Dodson, A. Embree & D. D'Alessandro 16097* (MO).

One of many species characterized by small, ovate leaves with slender stems, this species is easily identified by the long-pedunculate, yellow flowers. The petals are broadly ovate and pubescent, and the lateral lobes of the arrow-head-shaped lip curve up around the footless column.

Pleurothallis gracilipedunculata Foldats, Acta Bot. Ven. 3: 374, 1968.

Ety.: From the Latin *gracilipedunculatus*, "with slender peduncles," referring to the inflorescence.

Plant small to medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, ascending to erect, 4-12 cm long, with a thin, tubular sheath below the middle and 2-3 others above the base. **Leaf** coriaceous, erect, elliptical-ovate, acute, slightly acuminate, sessile, 3-4.5 cm long, 1.7-2.5 cm wide, the base rounded. **Inflorescence** a fascicle of solitary-flowered peduncles, 2.5-4 cm long, borne from a spathe 5 mm long, at the base of the leaf; floral bract 6 mm long; pedicel 7 mm long; ovary 4 mm long; **sepals** dull yellow, with faint purple spots, glabrous, the dorsal sepal ovate, acute, concave, 8 mm long, 4 mm wide, 3-veined, the lateral sepals connate completely into an ovate, obtuse, concave synsepal, 8 mm long, 5 mm wide, 4-veined; **petals** white with 3 purple stripes, elliptical-oblong, acute, slightly acuminate, 8 mm long, 1.75 mm wide, 3-veined, with the margins densely ciliate; **lip** pale yellow, triangular-trilobed, acute, 4.5 mm long, 2.5 mm wide, the basal angles erect, rounded, flanking the column, the disc featureless except for the 3 veins, the base deflexed, truncate, hinged to the base of the column; column stout, semiterete, 2 mm long, the anther and transverse stigma apical, the foot rudimentary.

VENEZUELA: **Táchira**: headwaters if the Río Quinimarí, near junction of quebradas La Ventana and Las Copas, alt. 2550 m, *G.C.K. Dunsterville & E. Dunsterville 1031* (Holotype: VEN).
COLOMBIA: **Norte de Santander**: east of Bucaramanga toward Berlin, alt. 2800 m, 27 Apr. 1982, *C. Luer, J. Luer, R. Escobar & D. Portillo 7581* (SEL).

This species occurs in the mountains of the Eastern Cordillera of Colombia and adjacent Venezuela. It is characterized by slender ramicauls longer than the ovate leaves. Flowes are borne by, long, arching, single-flowered peduncles from the base of the leaf in a fascicle. The dorsal sepal and synsepal are concave; the petals are acute and ciliate, and the lip is cordate, with basal lobes flanking the column.

Pleurothallis habenula Luer & Escobar, Orquideología 14: 152, 1981.

Ety.: From the Latin *habenula*, "a little strap or thong," referring to the blade of the lip.

Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 6-22 cm long, with a closely fitting tubular sheath below the middle and 2-3 others at the base. **Leaf** erect to more or less spreading, coriaceous, narrowly elliptical-ovate, acute, slightly acuminate, 4-7 cm long, 1.5-2.5 cm wide, cuneate below into the sessile base. **Inflorescence** a single flower produced successively, borne by a slender peduncle 1.5-2.5 cm long, from a spathe 5-7 mm long at the base of the leaf; floral bracts tubular, 3-4 mm long; pedicels 4-5 mm long; ovary 4 mm long; **sepals** translucent white, speckled and veined in red, glabrous, the dorsal sepal elliptical-ovate, subacute to obtuse, concave, 7-8 mm long, 5 mm wide, 3-veined, the lateral sepals connate into an ovate, obtuse, concave synsepal similar to the dorsal sepal, 7-8 mm long, 6.5 mm wide, 4-veined; **petals** rose, pubescent, triangular, acute, with the basal angles minutely auriculate, 4.5 mm long, 2.5 mm wide, 3-veined; **lip** purple, cellular glandular-pubescent, the blade narrowly oblong, obtuse, 5 mm long, 1.5 mm wide, acutely deflexed into a claw 2 mm long beneath the column; **column** red, 2.5 mm long, footless, the anther and stigma apical.

COLOMBIA: **Nariño**: cloud forest between La Cocha and Sibundoy, alt. 2700 m, 31 July 1978, *C. Luer, J. Luer, R. Escobar et al. 3119* (Holotype: SEL).
ECUADOR: **Carchi**: Bolívar, above La Paz, north road, alt. 3100 m, 18 Feb. 1998, *C. Luer, J. Luer, A. Hirtz & J. del Hierro 18727* (MO).

This species occurs in forests at high altitudes of the Andes of southern Colombia and northern Ecuador. It is characterized by a fascicle of single, long-pedunculate flowers. The dorsal sepal and synsepal are similarly ovate; the petals are large, triangular, acute and pubescent; and the blade of the lip is long-ligulate distal to an acutely deflexed, basal claw.

Pleurothallis lobata Luer, Orquideología 20: 214, 1996.

Ety.: From the Latin *lobatus*, "with lobes," referring to the lobed lip.

Plant small, presumably epiphytic, caespitose; roots slender. Ramicauls very slender, erect, 6-8 cm long, enclosed by a thin, tubular sheath below the middle and another at the base. **Leaf** erect, coriaceous, narrowly linear-ovate, acute, 5-6.5 cm long, 0.5 cm wide in the dried state, the base sessile, narrowly subcordate. **Inflorescence** a fascicle of successive, long-pedunculate, solitary flowers, borne from a 5 mm long spathe at the base of the leaf, the peduncles slender, 10-15 mm long; floral bract infundibular, 2-2.5 mm long; pedicel 3-3.5 mm long; ovary, 2.5 mm long; **sepals** "white with lilac," subcarinate, glabrous except for a few cellular spicules along the carinae, the dorsal sepal ovoid, acute, lightly acuminate, concave in the lower third, 6 mm long, 2 mm wide unexpanded, the lateral sepals completely connate into a concave, ovate, acute synsepal, 6 mm long, 2 mm wide; **petals** entire, narrowly ovate, oblique, acuminate, 5 mm long, 1 mm wide; **lip** trilobed, 1 mm long, 3 mm wide across the lateral lobes expanded, the lateral lobes oblong, erect, with broadly rounded ends, flanking the column, the apical lobe narrowly oblong, decurved, apiculate, 0.75 mm long, the disc with a suberect, acute callus above the base, the base truncate, firmly attached to the base of the column; **column** clavate, 1 mm long, the anther and stigma apical, the foot obsolescent.

COLOMBIA: **Antioquia**: epiphytic in damp forest along Río Dolores near Angostuna, alt. 2000-2300 m, Dec. 1891, *F.C. Lehmann s.n.* (Holotype: K).

This species was collected by Lehmann over a century ago. As far as I know, it has not been collected again. It is distinguished by the very slender ramicauls and leaves. The inflorescence is a fascicle of successive long-pedunculate flowers borne from the base of the leaf. The dorsal sepal and synsepal are narrowly concave; the petals are narrowly acuminate; and the lip is three-lobed with the lateral lobes large, rounded and erect, flanking the column, while the much smaller middle decurves. The base is firmly attached to the base of the footless column.

Pleurothallis orecta Luer & Escobar, Orquideología 20: 20, 1996.

Ety.: From the Greek *orektos*, "stretched out," referring to the elongated peduncle.

Plant small, epiphytic, caespitose; roots slender. Ramicauls very slender, erect, 5-10.5 cm long, with a tightly fitting tubular sheath below the middle, and 2-3 sheaths about the base. **Leaf** spreading, coriaceous, elliptical-ovate, acute, 3-4 cm long, 1.5 cm wide, cuneate to rounded below at the sessile base. **Inflorescence** a solitary flower borne by a slender, suberect to erect peduncle 3-4 cm long, subtended by a spathe 3 mm long; floral bract 3.5 mm long; pedicel 4 mm long; ovary 4.5 mm long; **sepals** pale yellow, suffused with red-brown along the veins, glabrous, the dorsal sepal ovate, narrowly obtuse, concave, 7 mm long, 3.25 mm wide, 3-veined, the lateral sepals connate into an ovate, obtuse lamina, 6.5 mm long, 3.5 mm wide, 4-veined; **petals** yellow, suffused with brown below the middle, ovate, slightly oblique, acute to narrowly obtuse, 5.5 mm long, 2 mm wide, 3-veined; **lip** yellow, suffused with purple, triangular, 2.25 mm long, 1.5 mm wide, the margins roughly but minutely erose, the apex acute, the basal angles narrowly obtuse, the disc slightly concave between an obscure pair of calli, the base deflexed below the column, hinged to the column-foot.

COLOMBIA: **Risaralda**: Munic. of Apia, alt. 2000 m, 1987, collected by G. Serna, cult. at Colomborquídeas, 27 Dec. 1992, *R. Escobar 5106* (Holotype: MO), C. Luer 16615.

This little species is basically similar to the others in the series. The solitary, yellow, red-striped, widely expanded flower is borne by an erect, slender peduncle as long as the leaf. Because the leaf is spreading or horizontal, the flower is held high above the blade. The dorsal sepal and synsepal are narrowly obtuse, the petals are nearly as large, and the lip is triangular.

Pleurothallis pseudopogon Luer & Hirtz, sp. nov.

Ety.: From the Greek *pseudopogon*, "a false beard," referring to the blade of the lip.

Species haec *P. habenulae* Luer & Escobar affinis, sed sepalis intus pubescentibus cum synsepalo infra medium convexo, petalis anguste oblongis et labelli lamina obovata fimbriata differt.

Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 10-18 cm long, with a closely fitting tubular sheath below the middle and 2-3 others at the base. **Leaf** erect to more or less spreading, coriaceous, elliptical-ovate, acute, slightly acuminate, 5-7 cm long, 2-2.5 cm wide, cuneate below into the sessile base. **Inflorescence** a single flower produced successively, borne by a slender peduncle 4 cm long, from a spathe 7-8 mm long at the base of the leaf; floral bracts infundibular, 7 mm long; pedicels 5 mm long; ovary 5 mm long; **sepals** translucent, mottled with purple, finely pubescent within, the dorsal sepal elliptical-ovate, concave, subacute to obtuse, 10.5 mm long, 5 mm wide, 3-veined, the lateral sepals connate into an ovate, subacute synsepal, concave above the middle, convex below the middle, 11 mm long, 7 mm wide, 4-veined; **petals** brown, densely short-pubescent, ciliate, narrowly oblong-ovate, acute, 10.5 mm long, 2 mm wide, 3-veined; **lip** brown, cellular glandular-pubescent, the blade obovate, subacute, minutely lacerate, 6.5 mm long, 3 mm wide, acutely deflexed from a claw 2 mm long beneath the column; **column** semiterete, 3 mm long, footless, the anther and stigma apical.

ECUADOR: **Carchi**: Bolívar, above La Paz, south road, alt. 3300 m, 18 Feb. 1998, *C. Luer, J. Luer, A. Hirtz & J. del Hierro 18752* (Holotype: MO).

This species, known from a single locality in northern Ecuador, is allied to *P. habenula*, which occurs nearby as well as in southern Colombia. It is distinguished from the latter by larger flowers, a synsepal convex below the middle; narrowly oblong, acute petals; and an obovate, fringed blade of the lip.

Pleurothallis quadricaudata Schltr., Repert. Spec. Nov. Regni Veg. Beih. 7: 112, 1920.

Ety.: From the Latin *quadricaudatus*, "with four tails," referring to the elongated, tail-like apices of the sepals and petals.

Syn.: *Pleurothallis arachnion* Luer, Phytologia 47: 74, 1980.
Ety.: From the Latin *arachnion*, "a cobweb," referring to the hairlike tips of the sepals and petals.

Plant small to medium in size, epiphytic, caespitose; roots slender, densely fasciculate. Ramicauls slender, erect, round in cross section, 2-8 cm long, with close, tubular sheaths above the base. **Leaf** thinly coriaceous, subspreading, sessile, ovate, 3-7 cm long, 1.2-2.3 cm wide, the apex acute, long-mucronate, the base broadly cuneate to rounded. **Inflorescence** a fascicle of single-flowered peduncles, borne from a prostrate spathe 2-3 mm long, at the base of the leaf; peduncles 10-20 mm long; floral bract 3-5 mm long; pedicel 4-5 mm long; ovary 3-4 mm long; **sepals** and petals green to purple, the dorsal sepal very narrowly ovate, acute, long-attenuate, 23-50 mm long, 3-6 mm wide, 3-veined, the lateral sepals connate completely into a similar synsepal, 23-50 mm long, 3.5-6 mm wide, 4-veined; **petals** very narrowly ovate, acute, subsigmoid, long-attenuate, 23-45 mm long, 3 mm wide, 3-veined, minutely ciliate; **lip** purple, triangular-sagittate, 3.5-4 mm long, 1.5 to 2.5 mm wide expanded, glabrous, the apex narrowly acute, the basal angles erect, acute, antrorse or uncinate, the disc with a glenion above the base, the base deflexed, hinged to the base of the column; column semiterete, 1.5 mm long, the anther and single-lobed stigma apical, the foot rudimentary.

COLOMBIA: **Antioquia**: without locality, *M. Madero s.n.* (Holotype destroyed at B). **Chocó**: San José del Palmar, cultivated at Colomborquídeas, 20 Nov. 1981, *C. Luer 6722* (SEL). **Nariño**: epiphytic in cloud forest north of Ricaurte, alt. ca. 1600 m, 3 Nov. 1979, *C. Luer, J. Luer, A. Hirtz & K. Walter 4606* (holotype of *P. arachnion*: SEL).
ECUADOR: **Imbabura**: forest southeast of Lita on road to Santa Rosa de Cachaco, alt. 1600 m, 19 Mar. 1991, *A. Hirtz 5303* (Lectotype of *P. quadricaudata* here designated: MO), C. Luer illustr. 15288.

From a Colombian collection by Madero, Schlechter described this species without a lip, because the long-attenuated sepals and petals were distinctive and unknown in any previously described species. His published illustration of the sepals and petals could represent any one of three closely allied species. A collection with uncinate basal lobes of the lip is chosen for the neotype. Two additional species are extremely similar, differing only in the morphology of the lip.

Pleurothallis quadricaudata is widely distributed in the Western Cordillera of Colombia and northwestern Ecuador. The long-tailed flower rests on the dorsum of an ovate leaf. The sepals and minutely ciliate petals with their hair-like attenuated apices vary in length from 23 to 50 millimeters. The lip of the specimen chosen for the neotype is narrowly triangular with erect, basal angles that are acute and antrorse to uncinate. The disc is mostly filled with a shallow, central depression with a callous, circular margin.

Pleurothallis quaternaria Luer, sp. nov.

Ety: From the Latin *quaternarius*, "with four parts," referring to the nearly equal sepals and petals.

Planta mediocris, foliis ovatis acutis, floribus solitariis successivis illis *P. rowleei* Ames persimilis, sepalo dorsali synsepalo petalisque plus minusve amplitudinis distinguitur.

Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, round in cross section, 11-15 cm long, with a close, tubular sheath above the base and another at the base. **Leaf** coriaceous, sessile, ovate, acute, 6-10 cm long, 2-3 cm wide, the base broadly cuneate. **Inflorescence** a fascicle of solitary, successive flowers borne from a prostrate spathe 5-8 mm long, at the base of the leaf; peduncles 20-25 mm long; floral bract 4 mm long; pedicel 3.5-5 mm long; ovary 3.5 mm long; **sepals** rose-purple, glabrous, the dorsal sepal tan, ovate, acute, concave below middle, 15 mm long, 5 mm wide, 3-veined, the lateral sepals connate into a similar synsepal, 14 mm long, 5.5 mm wide, 4-veined; petals rose-purple, ovate, oblique, acute, minutely ciliate, 12 mm long, 4 mm wide, 5-veined; lip purple, glabrous, triangular-sagittate, acute, 4 mm long, 2 mm wide, the basal angles erect, rounded, the disc slightly concave between a pair of indistinct calli over the veins, with a glenion above the base, the base subtruncate, thick, reflexed, hinged to the base of the column; column semiterete, 2 mm long, the anther and bilobed stigma apical, the foot rudimentary.

COLOMBIA: **Valle del Cauca**: without collection data, flowered in cultivation at Orquídeas del Valle, 12 March 1997, *C. Luer 18418* (Holotype: MO).

This species is closely related to *P. rowleei* Ames, but it is distinguished by the inflorescence that is single-flowered instead of racemose. The flowers are also very similar, but those of *P. quaternaria* are distinguished by the slightly larger, multi-veined petals that are about as long as the sepals.

Pleurothallis ramosii Luer, sp. nov.

Ety.: Named in honor of J.E. Ramos of the Universidad del Valle, Cali, Colombia, co-collector of this species.

Planta mediocris, foliis anguste ovatis, floribus solitariis successivis longi-pedunculatis, sepalo dorsali synsepaloque anguste ovatis acuminatis, petalis longi-linearibus, et labello trilobo, lobis lateralibus erectis rotundis, lobo antico ovato acuto, disco sulcato base cum callo acuto distinguitur.

Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect to suberect, 5-9 cm long, with a tightly fitting tubular sheath below the middle, and another at the base. **Leaf** suberect to spreading, coriaceous, ovate, acute, acuminate, long-mucronate, 4-6.5 cm long, 1-1.7 cm wide, the base cuneate into the sessile base. **Inflorescence** a solitary flower produced successively, borne by a suberect peduncle 20-23 mm long, subtended by a spathe 3 mm long at the base of the leaf; pedicel 6 mm long; floral bract 3 mm long; ovary 4 mm long; **sepals** yellow, glabrous, the dorsal sepal ovate, acute, acuminate, concave below the middle, 12 mm long, 4 mm wide unexpanded, 3-veined, the lateral sepals connate into a concave, ovate, acute lamina, 13 mm long, 4 mm wide, 4-veined; **petals** yellow, narrowly linear, acute, 12 mm long, 1 mm wide, 3-veined; **lip** red-purple, three-lobed, 3 mm long, 3.75 wide across the lobes expanded, the anterior lobe ovate, acute, with microscopically irregular margins, the basal lobes erect, broadly rounded, the disc sulcate centrally, with a transverse callus across the base with an acute, triangular projection, the base hinged to the base of the column-foot; column semiterete, 2.5 mm long, with the anther subapical and the stigma subapical, ventral, foot thick, pedestal-like.

COLOMBIA: **Chocó**: San José del Palmar, Cerro del Torrá, Río Negro below the heliport, alt. 1900 m, 15 Aug. 1988, *J.E. Ramos, P.A. Silverstone, L.H. Ramos et al. 1224* (Holotype: CUVC; Isotype: MO), C. Luer illustr 18463; same area, alt. 1800 m, 12 Aug. 1988, *J.E. Ramos, P.A. Silverstone, L.H. Ramos et al. 1174* (CUVC, MO).

This species, apparently endemic on Cerro del Torrá in the Western Cordillera, is characterized by slender ramicauls; spreading, narrowly ovate leaves; successive, long-pedicellate flowers; narrowly ovate, acuminate dorsal sepal and synsepal; long, linear petals; and a three-lobed lip with large, erect, rounded basal lobes and an ovate, acute, anterior lobe. The disc of the lip is sulcate, overlaid basally with a pointed callus from the base.

Pleurothallis sagittilabia Luer, sp. nov.

Ety: From the Latin *sagittilabius*, "with arrow-shaped lip," referring to the labellum.

Planta mediocris, foliis anguste ovatis acutis longimucronatis, floribus solitariis successivis, sepalo dorsali synsepaloque ovatis concavis leviter acuminatis, petalis subsigmoideis acutis minutissime pubescentibus, labello sagittiformi acuto glabri.

Plant medium in size, epiphytic, caespitose; roots slender, densely fasciculate. Ramicauls slender, erect, round in cross section, 9-11 cm long, with a close, tubular sheath above the base and another at the base. **Leaf** coriaceous, sessile, narrowly ovate, 5-6 cm long, 1.2 cm wide, the apex acute, long-mucronate, the base broadly cuneate, rounded. **Inflorescence** a fascicle of solitary, successive, yellow flowers borne from a prostrate spathe 4-5 mm long, at the base of the leaf; peduncles 7-8 mm long; floral bract 3 mm long; pedicel 2.5-3 mm long; ovary 3 mm long; **sepals** glabrous, the dorsal sepal ovate, acute, acuminate, concave, 6 mm long, 2.5 mm wide, 3-veined, the lateral sepals connate into a similar synsepal, 6 mm long, 2.5 mm wide, 4-veined; petals subsigmoid, acute, slightly acuminate, minutely pubescent, 4.5 mm long, 1.3 mm wide, 1-veined; lip triangular-sagittate, 2.6 mm long, 2 mm wide across basal lobes expanded, glabrous, the apex narrowly acute, the basal angles erect, subacute, flanking the column, the disc slightly concave above a low transverse callus above the base, the base subtruncate, firmly hinged to the base of the column; column cylindrical, 1 mm long, the anther and single-lobed stigma apical, the foot rudimentary.

COLOMBIA: **Valle del Cauca**: Finca Zingara, between Cali and Buenaventura, alt. 1900 m, 27 Nov. 1994, *J. Giraldo G. & L. Olver A. 557* (Holotype: TULV; Isotype: MO), C. Luer illustr. 18412.

This species is closely related to the multiflowered *P. rowleei* Ames, but *P. sagittilabia* is distinguished by the short, successively single-flowered inflorescence. Within the series *Amphygiae* it is most closely related to *P. forceps-cancri*, but easily distinguished from the latter by the much shorter, non-caudate sepals and petals.

Pleurothallis simulans L.O.Williams, Ann. Missouri Bot. Gard. 27: 281, 1940.

Ety.: From the Latin *simulans*, "resembling," in allusion to the column and lip with the large glenion, that suggested the genus *Stelis* to the author.

Plant small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 2.5-6 cm long, with a close, tubular sheath below the middle and another 1-2 sheaths at the base. **Leaf** coriaceous, suffused with purple beneath, erect, narrowly elliptical, acute, sessile, 3-5 cm long, 0.7-1 cm wide, narrowly cuneate below into the base. **Inflorescence** a solitary, non-resupinate flower borne by a slender peduncle 4 mm long, from a spathe 5-6 mm long at the base of the leaf; floral bract 3 mm long; pedicel 4 mm long; ovary 3 mm long; **sepals** purple, glabrous externally, cellular-papillose within, the dorsal sepal ovate, acute, acuminate, 7-8 mm long, 4 mm wide, 3-veined, the lateral sepals connate completely into an ovate, acute synsepal, 7-8 mm long, 5 mm wide, 4-veined; **petals** purple, elliptical, acute, slightly acuminate, with ciliate-lacerate margins, 5-6 mm long, 2 mm wide, 1-veined; **lip** purple with yellow margin, thick, ovoid, 3 mm long, 3 mm wide, the apex obtuse, minutely apiculate, with the margin thick, denticulate, verrucose, the margins above the base rounded, incurved, the disc with a large glenion extended from the shallowly concave base, the base broadly truncate, hinged to the base of the column; column purple, terete, stout, 1 mm long, the anther and stigma apical, the foot thick, tuberculate.

PANAMA: **Coclé**: north rim of El Valle de Antón, *P. Allen 1912* (Holotype: MO?). **Veraguas**: 3 Sept. 1976, *C. Luer & H. Butcher 1156* (SEL).

This species is endemic in central Panama where it is uncommon. It is characterized by a single, non-resupinate dark-purple flower produced at the base of a narrowly elliptical leaf. The sepals are ovate and shortly acuminate, the petals are elliptical with lacerate margins, and the lip is thickly and broadly ovate with a minutely denticulate-fringed margin. A large glenion occupies the center of the disc.

The position of this species in classification is not certain. It has characters that strongly suggest both subsections *Acroniae* and *Macrophyllae-Fasciculatae*, but the habit and petals together seem better accommodated here.

Pleurothallis sobrina Luer & Hirtz, Lindleyana 11: 185, 1996.

Ety.: From the Latin *sobrinus*, "a cousin," referring to the close relationship of this species to others in the subsection.

Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 12-14 cm long, enclosed by a thin, tubular sheath below the middle and another at the base. **Leaf** erect, coriaceous, ovate, subacute, lightly acuminate, 3.5-4 cm long, 1.5-1.8 cm wide, the base sessile, subcordate. **Inflorescence** a fascicle of successive, long-pedunculate, solitary flowers, borne from a 6 mm long spathe at the base of the leaf, the peduncles slender, 20-25 mm long; floral bract 3.5 mm long; pedicel 2 mm long; ovary 1.5 mm long; **sepals** (color unknown), glabrous, the dorsal sepal ovate, acute, lightly acuminate, concave, 7 mm long, 3 mm wide unexpanded, the lateral sepals completely connate into a lamina similar in outline to the dorsal sepal, 6.5 mm long, 3.5 mm wide; **petals** (color unknown), ciliate, obliquely oblong, the distal third acute, acuminate, 6 mm long, 1.5 mm wide; **lip** (color unknown), trilobed, 2.5 mm long, 3 mm wide across the lateral lobes, the apical lobe narrowly triangular, acute, 1.5 mm long, the lateral lobes erect and flanking the column, broadly uncinate, with the subacute apices pointing forward, the disc with a small glenion in the center, the base truncate, decurved, minutely pubescent, hinged to the column-foot; **column** terete, 2.5 mm long, the anther and stigma apical, the foot obsolescent.

ECUADOR: **Pastaza**: epiphytic in cloud forest along Río Zuñag, alt. 2400 m, 23-28 Feb. 1990, *A. Hirtz et al. 4859* (Holotype: MO).

This species is distinguished from the numerous others in this single-flowered series of subsection *Acroniae* by the proportionately long, slender ramicauls. As with many of the others, the inflorescence is a fascicle of long-pedunculate flowers borne from the base of an ovate-subcordate leaf. The flower of *P. sobrina* is distinguished by its small size, sepals without tails, and a three-lobed lip with the small middle lobe narrowly triangular and the erect lateral lobes broadly uncinate flanking the column.

Pleurothallis somnolenta Luer, Orquideología 20: 225, 1996.

Ety.: From the Latin *somnolentus*, "sleepy," in allusion to the gaping, nodding flowers.

Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 8-15 cm long, with a close, tubular sheath below the middle and 2-3 others at the base. **Leaf** erect, coriaceous, narrowly ovate, slightly acuminate, acute, 7-10 cm long, 1-1.5 cm wide, cuneate below into the sessile base. **Inflorescence** a congested fascicle of single flowers, borne by peduncles 17-18 mm long, with a thin spathe 3-5 mm long at the base of the leaf; floral bracts 3-5 mm long; pedicels slender, 5-6.5 mm long; ovary 3.5-5 mm long; **sepals** translucent purple or yellow, glabrous, shallowly carinate, the dorsal sepal ovate, acute, acuminate, concave, 10 mm long, 4.5 mm wide, 3-veined, the lateral sepals connate into an ovate, acute, acuminate, concave synsepal, 10 mm long, 4 mm wide, 6-veined, the apex narrowly cymbiform, minutely bilobulate; **petals** purple or yellow, glabrous, ovate, oblique, acute, acuminate, 6 mm long, 2.25 mm wide, 3-veined; **lip** yellow, 3-lobed, 2 mm long, 4 mm wide across the lobes expanded, the apical lobe ovate, subacute, apiculate, with more or less minutely fimbriate margins, the lateral or basal lobes broadly rounded, erect, flanking the column, the disc broadly callous, the base broad, subtruncate, deflexed, hinged to the base of the column; **column** stout, 1.5 mm long, footless, the anther, rostellum and stigma apical.

COLOMBIA: **Chocó**: Munic. San José del Palmar, Cerro del Torrá, epiphytic in cloud forest, alt. 2000-2400 m, 12 Aug. 1988, National Geographic Society grant 3884-88, *P. Silverstone-Sopkin, N. Paz, R.T. González, J.E. Ramos, L.H. Ramos & A. Henao 4334* (Holotype: CUVC; Isotype: MO), C. Luer illustr. 16335; same area, alt. 2500-2550 m, 14 Aug. 1988, National Geographic Society grant 3884-88, *P. Silverstone, N. Paz, R.T. González, J.E. Ramos, L.H. Ramos & A. Henao 4384, 4389* (CUVC, MO).

Pleurothallis somnolenta, apparently endemic in a remote area of the Western Cordillera of Colombia, is distinguished by the narrowly ovate, sessile leaves; a fascicle of single-flowered peduncles; translucent yellow or purple sepals 10 millimeters long that are concave all the way to the tips; oblique, acuminate, three-veined petals; and a three-lobed lip with the broad, rounded, basal lobes flanking the column. This is another species, like *P. simulans*, that appears to be between subsection *Acroniae* and section *Macrophyllae-Fasciculatae*.

Pleurothallis stevensonii Luer, Selbyana 1: 296, 1975.

Ety.: Named in honor of the late F L Stevenson of Chamblee, GA, who discovered this species.

Plant small, epiphytic, caespitose; roots very slender. Ramicauls very slender, erect to suberect, 3-10 cm long, with a thin, tubular sheath below the middle and another at the base. **Leaf** suberect to spreading, thinly coriaceous, ovate, acute, 2.5-4 cm long, 1-2.2 cm wide, the base sessile, rounded to subcordate. **Inflorescence** a fascicle of successive, long-pedunculate, solitary flowers, borne from a 5 mm long spathe at the base of the leaf, the peduncles slender, erect, 20-30 mm long; floral bract tubular, 2.5-3 mm long; pedicel 5-15 mm long; ovary 2.5 mm long; **sepals** translucent light green, sometimes with rose spots, subcarinate, glabrous, the dorsal sepal ovate, acute, lightly acuminate, concave in the lower third, 8-10 mm long, 3-4 mm wide unexpanded, the lateral sepals completely connate into a concave, ovate, narrowly obtuse synsepal, 8-10 mm long, 3.5-4 mm wide; **petals** fleshy, sometimes mottled with rose, entire, linear-ovate, acute, acuminate, 8-9 mm long, 1.5 mm wide; **lip** green or purple, trilobed, 2.5 mm long, 2.5 mm wide across the lateral lobes expanded, the lateral lobes broadly rounded, lightly incurved, the apical lobe narrowly acute, descending, the disc with a low, circular callus above the base, the base truncate, concave on the end, hinged to the base of the column; **column** semiterete, 2 mm long, the anther and stigma apical, the foot obsolescent.

ECUADOR: **Pichincha**: epiphytic along the new road between Quito and Santo Domingo, 10 Mar. 1975, *C. Luer & R. Kent 224* (Holotype: SEL); same area, alt. 1500 m, 17 Aug. 1975, *C. Luer, G. Luer & S. Wilhelm 567* (SEL); same area *F L Stevenson 111974-12* (SEL); old road between Chiriboga and Santo Domingo, alt. 1650 m, 31 Mar. 1984, *C. Luer, S. Dalström, T. Höijer, J. Kuijt & A. Hirtz 9852* (MO); Santa Rosa de Toachi, alt. 1300 m, Mar. 1990, *A. Hirtz, X. Hirtz & K.H. Baumann 4694* (K, MO).

This fragile, little species is endemic in a small area on the western slopes of Mt. Pichincha. It is characterized by small, thin, ovate leaves borne by slender, suberect ramicauls. The solitary flowers, held erect above the leaf by elongated peduncles, are produced successively in a fascicle. The sepals and petals are acute and acuminate, delicately dotted with rose. The lip is broadly transversely lobed with a short, acuminate apical lobe.

Pleurothallis tetrachaeta Luer & Hirtz, sp. nov.

Ety.: From the Greek *tetrachaete*, "with four hairs," referring to the elongated, hairlike apices of the sepals and petals.

Species haec *P. quadricaudata* Schltr. similis, sed pedunculis longioribus, labello duplo minore et lobis basalibus subnullis differt.

Plant small, epiphytic, caespitose; roots slender. Ramicauls slender, suberect, round in cross section, 4-8 cm long, with close, tubular sheaths above the base. **Leaf** thinly coriaceous, subspreading, sessile, ovate, acute, 3-4 cm long, 1.2-1.5 cm wide, long-mucronate, the base broadly cuneate to rounded. **Inflorescence** a fascicle of single-flowered peduncles, borne from a prostrate spathe 2-3 mm long, at the base of the leaf; peduncles 25-35 mm long; floral bract 3 mm long; pedicel 4-5 mm long; ovary 3-4 mm long; **sepals** and petals pale rose, the dorsal sepal very narrowly ovate, acute, long-attenuate, 25-40 mm long, 2.5-3 mm wide, 3-veined, the lateral sepals connate completely into a similar synsepal, 25-40 mm long, 3.5-4 mm wide, 4-veined; **petals** very narrowly ovate, acute, subsigmoid, long-attenuate, 20-35 mm long, 1.5-1.75 mm wide, 3-veined, minutely ciliate; **lip** rose, triangular-sagittate, 2.5 mm long, 1 mm wide, glabrous, the apex acute, decurbed below the middle with low, rounded, marginal angles, the disc featureless, the deflexed base 0.75 mm long, hinged to the base of the column; column semiterete, 1 mm long, the anther and single-lobed stigma apical, the foot rudimentary.

ECUADOR: **Esmeraldas**: epiphytic in wet forest west of Lita, alt. 750 m, 18 Jan. 1987, *C. Luer, J. Luer, A. Hirtz, C.H. Dodson, D. Benzing & D. Bermudes 12388* (Holotype: MO).

This species is closely allied to *P. quadricaudata* and *P. tipuloides*. All three occur in different localities. They are superficially similar except that the longer peduncles of *P. tetrachaeta* bear the flower beyond the tip instead of midway. The sepals and petals with long-attenuated apices are inseparable from those of the other two. The lip, however, is only half the size without basal lobes. The morphology of the lips of these three taxa may be found to merge if a large number of specimens were available for study. At the present, they will be recognized because the distinctly different lips probably indicate different pollinators.

Pleurothallis tipuloides Luer, Phytologia 54: 388, 1983.

Ety.: Named for the fancied resemblance of the flower to a crane fly (*Tipula*). *Tipula* from the Latin, "a water spider."

Plant medium in size, epiphytic, caespitose; roots slender, densely fasciculate. Ramicauls slender, erect, round in cross section, 4-9 cm long, with close, tubular sheaths above the base. **Leaf** thinly coriaceous, subspreading, sessile, ovate, 3.5-6 cm long, 1.5-2 cm wide, the apex acute, long-mucronate, the base broadly cuneate to rounded. **Inflorescence** a fascicle of solitary-flowered peduncles borne from a prostrate spathe 3-4 mm long, at the base of the leaf; peduncles 15-20 mm long; floral bract 3 mm long; pedicel 4 mm long; ovary 2 mm long; **sepals** and petals translucent green, suffused with purple, the dorsal sepal narrowly ovate, concave, acute, long-attenuate, 28 mm long, 3 mm wide, 3-veined, the lateral sepals connate completely into a similar synsepal, 28 mm long, 3.5 mm wide, 4-veined; **petals** narrowly ovate, subsigmoid, acute, long-attenuate, 20 mm long, 1.5 mm wide, 3-veined, minutely ciliate; **lip** light green, ovate-trilobed, 5 mm long, 2 mm wide, the apical lobe narrowly triangular, sharply acute, the basal lobes erect, rounded, denticulate, embracing the column, the disc with a small glenion at the base of the middle lobe, the base hinged to the base of the column; column semiterete, 1.5 mm long, the anther and single-lobed stigma apical, the foot rudimentary.

ECUADOR: **Pichincha**: epiphytic in cloud forest west of Mindo toward Puerto Quito, alt. 1600 m, 13 Mar. 1982, *C. Luer, A. Hirtz & S. Dalström 7324* (Holotype: SEL). "Pacto," *W. Teague 258* (MO).

This species from the western slope of Pichincha is similar to *P. quadricaudata* from Colombia and Ecuador farther to the north. Both species are characterized by an ovate leaf and a single flower with long-acuminate, attenuated sepals and petals. The lip of *P. tipuloides* is twice longer with a narrowly triangular anterior lobe with a small glenion, and erect, rounded, denticulate basal lobes.

Pleurothallis wigginsii C.Schweinf., Amer. Orch. Soc. Bul. 17: 494, 1948.

Ety.: Named in honor of Ira L. Wiggins of Stanford University who first collected this species.

Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, suberect, 6-19 cm long, with a tubular sheath below the middle and 2-3 others at the base. **Leaf** more or less spreading to horizontal, coriaceous, narrowly ovate, acute, 5-8 cm long, 1.8-2.5 cm wide, rounded to cuneate below into the sessile base. **Inflorescence** a fascicle of successive, single flowers, borne by slender peduncles 2-4 cm long, from a spathe 5 mm long at the base of the leaf; floral bracts tubular, 5 mm long; pedicels 5-7 mm long; ovary 5 mm long; **sepals** white, dotted or mottled with purple, minutely pubescent within, the dorsal sepal ovate, acute, concave, 9-11 mm long, 5 mm wide, 3-veined, the lateral sepals connate into an ovate, acute, concave synsepal, sometimes convex below the middle, 10-11 mm long, 5 mm wide, 4-veined; **petals** red to brown, narrowly ovate, acute, minutely ciliate, 6-9 mm long, 1.5-2.25 mm wide, 3-veined; **lip** dark red to brown, sagittate-trilobed, microscopically pubescent, with the margins microscopically erose, 6.5 mm long, 2.5 mm wide, the anterior lobe ovate, acutely deflexed from a claw 2 mm long, acute at the apex, the basal lobes erect, rounded, retrorse, the disc with a small glenion above the base, the base concave, unguiculate, hinged to the base of the column; **column** stout, semiterete, 2.75 mm long, the anther and stigma apical, the foot obsolescent.

ECUADOR: **Imbabura**: Cayambe, south of Las Toldadas, in boggy ciénagas, alt. 10,300 ft., 29 July 1944, *I.L. Wiggins 10510* (Holotype: AMES; Isotype: CI). **Pichincha**: west slope of Volcán Iliniza, Cerro Azul, alt. 2800 m, 23 Jan. 1987, *C. Luer, J. Luer & A. Hirtz 12481* (MO). **Napo**: east of the pass east of Salcedo, alt. 3000 m, 12 Nov. 1979, *C. Luer, J. Luer & A. Hirtz 4768* (SEL).

This species occurs in subparamo forests at high altitudes of the Andes of north-central Ecuador. It is characterized by a fascicle of single, long-pedunculate flowers borne from the base of an ovate leaf. The dorsal sepal and synsepal are similarly ovate; the petals are narrowly ovate, acute and minutely ciliate; and the lip is sagittate, acutely deflexed above a claw attached to the base of a footless column. At the base of the blade the basal angles or lobes are erect, rounded and retrorse. The blade is ovate, acute and minutely pubescent.

PLEUROTHALLIS SUBSECTION *PLEUROTHALLIS*

Pleurothallis subgen. **Pleurothallis** sect. **Pleurothallis** subsect. **Pleurothallis.**

Type: *Pleurothallis ruscifolia* (Jacq.) R.Br.

Ety.: From the Greek *pleurothallos*, "riblike branches," referring to the cluster of erect, slender ramicauls seen in *P. ruscifolia* and in much of the rest of the subgenus.

Plants perennial, small to large in size, normally epiphytic to terrestrial, caespitose; roots slender. Ramicauls erect, terete, elongate, non-pseudobulbous, unifoliate, with a closely fitting, tubular sheath below the middle and 1-3 other sheaths at the base. **Leaf** erect to suberect, coriaceous, smooth, narrowly or broadly elliptical to ovate, the apex acute to slightly acuminate subacute, the base cuneate into a distinct petiole. **Inflorescence** shortly racemose or single-flowered, flowers usually long-pedicellate, resupinate or non-resupinate depending upon the position, usually pale-colored, borne by a slender peduncle that emerges from the ramicaul at the base of the leaf with a short, inconspicuous spathe; floral bracts thin, infundibular or tubular, acute; pedicels slender, exceeding the floral bract; ovary smooth; trivalvate; **sepals** glabrous, membranous, acute, subacute or obtuse, to acuminate, the dorsal sepal free from the lateral sepals, concave below the middle, the lateral sepals completely connate into a flat or concave, but not deeply cucullate, synsepal; **petals** narrowly oblong to linear, acute to acuminate, entire, thickened toward the apex; **lip** small, thick, variously shaped, with or without small lateral lobes, with or without calli, deflexed or not deflexed near the middle, attached to the base of the column; **column** terete, non-winged, non-toothed, non-hooded, the anther apical and the stigma apical or subapical, pollinia 2, obovoid, with a microscopic viscidium, the base of the column thickened with the apex of the ovary.

Twelve species are included here with the common and widely distributed type of the genus, *Pleurothallis ruscifolia*. Most are closely allied with the flowers borne in short, one- to two-flowered racemes (in one species, up to eight flowers), most of which superficially appear to be single-flowered. They are produced in fascicles at the base of a petiolate leaf. Somewhat longer racemes bear a few simultaneous flowers in two exceptions. Single-flowered species with a petiolate leaf occur in subsection *Macrophyllae-Racemosae* (i.e., *P. inflata* Rolfe).

EPITHETS PUBLISHED IN *PLEUROTHALLIS* REFERABLE TO SUBSECTION *PLEUROTHALLIS*

Pleurothallis bicallosa Luer & Hirtz.....Fig. 51.
Pleurothallis cernua Luer.....Fig. 52.
Pleurothallis chloroleuca Lindl.....Fig. 53.
Pleurothallis circinata Luer.....Fig. 54.
Pleurothallis cleistogama Luer.....Fig. 55.
Pleurothallis cunabularis Luer.....Fig. 56.
Pleurothallis flaveola Luer & Hirtz.....Fig. 57.
Pleurothallis glomerata Ames = **P. ruscifolia**
Pleurothallis helleri Hawkes.....Fig. 58.
Pleurothallis medusa Luer.....Fig. 59.
Pleurothallis multicaulis Poepp. & Endl. = **P. ruscifolia**
Pleurothallis notabilis Luer & Escobar.....Fig. 60.
Pleurothallis reichenbachiana Schltr. = **P. chloroleuca**
Pleurothallis rhomboglossa Lindl. = **P. chloroleuca**
Pleurothallis ruscifolia (Jacq.) R.Br.....Fig. 61.
Pleurothallis ruscifolia (Jacq.) R.Br. var. *caquetana* Schltr. = **P. ruscifolia**
Pleurothallis succosa Lindl. = **P. ruscifolia**
Pleurothallis valvola Luer.....Fig. 62.
Pleurothallis ventricosa Lindl. = **P. chloroleuca**
Pleurothallis wendlandiana Rchb.f. = **P. chloroleuca**

KEY TO THE SPECIES OF SUBSECTION *PLEUROTHALLIS*

1 Racemes short, about as long as the petiole of the leaf, 1- to 3-flowered.....2
1' Racemes about half as long as the leaf, 3- to 8-flowered.....11

2 Leaves large, 5-10 cm broad 3
2' Leaves small to large, 1-4 cm broad 4

3 Sepals 8-12 mm long; petals narrowly attenuate.....*P. chloroleuca*
3 Sepals 5-7 mm long; petals oblong, acute.....*P. flaveola*

4 Sepals less than 4 mm long 5
4' Sepals more than 5 mm long 6

5 Flowers cleistogamous; petals thickly triangular.....*P. cleistogama*
5' Flowers not cleistogamous; petals oblong, obtuse.....*P. valvola*

6 Lip transversely revolute.....*P. circinata*
6' Lip not transversely revolute.....7

7 Lip subquadrate, abruptly apiculate, bicallous.....*P. bicallosa*
7' Lip not as above 8

8 Lip membranous, more or less transverse with broadly rounded sides.....9
8' Lip thick, not transverse with broadly rounded sides.....10

9 Leaf narrowly cuneate into the petiole; lip with incurved sides.....*P. cernua*
9' Leaf rounded at the base, abruptly contracted into the petiole; lip with sides not incurved.....*P. cunabularis*

10 Sepals more than 15 mm long; lip with lateral lobes.....*P. medusa*
10' Sepals less than 10 mm long; lip without lateral lobes.....*P. ruscifolia*

11 Lip with the base deeply concave, articulated with a bulbous column-foot .....
.....*P. helleri*
11' Lip with the base hinged to the column-foot.....*P. notabilis*

Pleurothallis bicallosa Luer, Lindleyana 11: 150, 1996.

Ety.: From the Latin *bicallosus*, "with two calli," referring to the lip.

Plant medium in size, epiphytic, caespitose; roots numerous, slender. Ramicauls slender, erect, 6-8 cm long, with an inflated tubular sheath near the middle and 2-3 other sheaths at the base. **Leaf** erect, coriaceous, elliptical-ovate, acute, 7-9 cm long, 2-3.3 cm wide, the base cuneate into a petiole ca. 1 cm long. **Inflorescence** a dense fascicle of numerous, simultaneous flowers produced by 1- to 2-flowered peduncles ca. 1 mm long within a fugacious spathe ca. 5 mm long; floral bracts thin, infundibular, 4 mm long; pedicels 5 mm long; ovary 3-4 mm long; **sepals** yellow-white, glabrous, the dorsal sepal ovate, acute, acuminate, deeply concave, 8.5 mm long, 4 mm wide unexpanded, 3-veined, the lateral sepals connate into an ovate, acute, acuminate synsepal, 8.5 mm long, 3.5 mm wide, 4-veined; **petals** yellow-white, linear-ovate, acute, 8 mm long, 1 mm wide, 3-veined; **lip** yellow-white, transversely subquadrate, 2 mm long, 2.3 mm wide, the apex transverse, with a decurved apiculum 0.5 mm long, with the margins minutely erose, slightly decurved below the middle, the disc with an erect pair of calli near the center, the base truncate, not deflexed, hinged on the margin to the column-foot; **column** terete, 1 mm long, the foot thick, 0.5 mm long with the apex of the column, the anther, rostellum and stigma apical.

ECUADOR: **Carchi**: plateau above Chical, alt. 1800 m, 11 Jan. 1993, *A. Hirtz 5863* (Holotype: MO).

In habit this species is inseparable from the ubiquitous *P. ruscifolia*, which is variable in size and shape of the leaf. However, the flowers of *P. bicallosa* are somewhat larger than those of the usual *P. ruscifolia*, but the sepals and petals are of the same shape. The lip is subquadrate and larger than the usual lip seen in *P. ruscifolia*, and a well-developed apiculum decurves abruptly from the broad, anterior margin. The base is not at all deflexed as often seen in *P. ruscifolia*. Most distinctive is the pair of erect, subacute calli on the center of the disc.

Pleurothallis cernua Luer, Selbyana 1: 234, 1975.

Ety.: From the Latin *cernuus*, "drooping," referring to the flowers.

Plant small to large, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 8-27 cm long, with a close, tubular sheath near the middle and 2-3 others at the base. **Leaf** erect, coriaceous, narrowly elliptical-ovate, acute, acuminate, 7-14 cm long, 1-3 cm wide, narrowly cuneate below into a petiole 0.5-1.5 cm long. **Inflorescence** a fascicle of 1-3 drooping, solitary flowers, borne by arching peduncles 4-10 mm long, from a spathe less than 1 cm long at the apex of the ramicaul; floral bract 3-5 mm long; pedicel 5-8 mm long; ovary 5-7 mm long; **sepals** translucent pale green, pale rose to white, glabrous, membranous, the dorsal sepal often with a central, purple stripe, narrowly ovate, acute, 8-9.5 mm long, 2.5-3.75 mm wide, 3-veined, the lateral sepals completely connate into a concave, narrowly ovate, acute synsepal, 6-9 mm long, 2-5 mm wide expanded, 6-veined; **petals** colored as the sepals, glabrous, narrowly linear, acute, 5-8.5 mm long, 0.8-1 mm wide, 3-veined; **lip** pale green, often with a central, purple stripe, transversely obovate to subquadrate, 2-3 mm long, 3.5 mm wide expanded, the apex broadly obtuse, minutely apiculate, with the sides broadly rounded and more or less incurved, flanking the column, the disc shallowly concave, with a basal glenion, the base truncate, attached to the base of the column; **column** stout, terete, 2-3 mm long, the foot obsolescent, the anther, rostellum and stigma apical.

ECUADOR: **Tungurahua**: Valle de Chaupe above Baños, alt. 2200 m, 24 July 1975, *C. Luer, G. Luer & S. Wilhelm 426* (Holotype: SEL). **Sucumbíos**: between El Carmelo and La Bonita, alt. 2200 m, Aug. 1990, *A. Hirtz, X. Hirtz, J. del Hierro & F. Sarmiento 4989* (MO), C. Luer illustr. 15284. **Pastaza**: Río Zuñag, alt. 2000 m, 28 Feb. 1990, *A. Hirtz, S. Dalström et al. 4644, 4860* (SEL). **Napo**: Guacamayo range, between Baeza and Tena, alt. 2150 m, 29 Mar. 1984, *C. Luer, S. Dalström, T. Höijer & J. Kuijt 9804* (MO); same area, alt. 2050 m, 30 June 1985, *C.H. Dodson & A. Hirtz 15909* (MO). **Morona-Santiago**: between Sigsig and Chiguinda, alt. 2500 m, 11 Aug. 1990, *A. Hirtz 5064* (MO). **Zamora-Chinchipe**: south of pass south of Yangana, alt. 2450 m, 18 Mar. 1984, *C. Luer, S. Dalström, T. Höijer, J. Kuijt & D. D'Alessandro 9569* (MO); above Valladolid toward Yangana, alt. 2300 m, 1 Feb. 1985, *G. Harling & L. Andersson 21426* (GB); same area, alt. 2450, 23 Mar. 1985, *C. Luer, J. Luer, A. Hirtz & W. Flores 10854, 10943* (MO); Quebrada Honda, alt. 1450 m, 14 Mar. 1986, *D. D'Alessandro 532* (MO); Cordillera del Condor, Patchicutza, alt. 1200-1500 m, June 1991, *A. Hirtz 5531* (MO); east of Mayaicu, alt. 1300 m, 20 May 1988, *C. Luer, A. Hirtz, W. Flores, A. Andreetta & W. Teague 13500* (MO, QCNE); east of Paquisha, alt. 1200 m, 23 Jan. 1992, *C. Luer, J. Luer, A. Hirtz, A. & P. Jesup 16120* (MO); east of Los Encuentros, alt. 1700 m, 10 Feb. 1993, *S. Dalström, T. Höijer & H. Wanntorp 1879* (MO).
COLOMBIA: **Chocó**: San José del Palmar, Cerro del Torrá, above the heliport, alt. 1970 m, 9 Jan. 1984, *P. Silverstone-Sopkin, N. Paz, A. Duque & H. Bayona 1678* (CUVC, MO).

This species is relatively frequent and variable, especially in size. The single, drooping flowers are produced in a fascicle at the base of a narrowly elliptical, petiolate leaf. The colors vary from white through pale rose and pale green, often with a purple strip down the center of the dorsal sepal and lip. The lip is transversely oblong, but variable in proportions of the broadly rounded sides.

Pleurothallis chloroleuca Lindl., Orch. Lind. 2: 1846.

Ety.: From the Greek *chloroleucos*, "greenish white," referring to the flowers.

Syn.: *Pleurothallis ventricosa* Lindl., Folia Orch. *Pleurothallis* 16, 1859.
Ety.: From the Latin *ventricosis*, "swollen ventrally," referring to the sepaline tube.

Syn.: *Pleurothallis wendlandiana* Rchb.f., Flora 71: 153, 1888.
Ety.: Named for Hofgärtner Hermann Wendland who cultivated the species at Herrenhausen.

Syn.: *Pleurothallis rhomboglossa* Rchb.f., Flora 71: 154, 1888, not 1865.
Ety.: From the Greek *rhomboglossa*, "a rhombus-shaped lip," referring to the labellum.

Syn.: *Humboldtia chloroleuca* (Lindl.) Kuntze, Rev. Gen. Pl. 667, 1891.

Syn.: *Humboldtia ventricosa* (Lindl.) Kuntze, Rev. Gen. Pl. 668, 1891.

Syn.: *Pleurothallis reichenbachiana* Schltr., Repert. Spec. Nov. Regni Veg. Beih. 8: 131, 1921.
Ety.: Named for Reichenbach, a new name to succeed *P. rhomboglossa* 1888.

Plant large, terrestrial, densely caespitose; roots slender. Ramicauls stout, erect, 20-50 cm long, with a tubular sheath near the middle and 2-3 other sheaths at the base. **Leaf** erect, coriaceous, elliptical-ovate, acute to subacute, 15-22 cm long, 5-8 cm wide, the base cuneate into a distinct petiole 1-2 cm long. **Inflorescence** a dense fascicle of numerous, simultaneous, single flowers, from a spathe 7-10 mm long at the base of the petiole; peduncles 1-4 mm long within the spathe; floral bracts thin, infundibular, 3-6 mm long; pedicels 5-8 mm long; ovary 3-5 mm long; **sepals** pale yellow-green, glabrous, the dorsal sepal ovate, acute, acuminate, concave, 8-12 mm long, 4-6 mm wide unexpanded, 3-veined, the lateral sepals connate into an ovate, acuminate, narrowly obtuse synsepal, 8-12 mm long, 3-5 mm wide, 4-(6-) veined; **petals** yellow-green, narrowly linear-ovate, acute, 7-9 mm long, 1-1.25 mm wide, 3-veined; **lip** cream, marked with purple, subquadrate, 2-2.5 mm long, 1.75-3 mm wide, the apex obtuse to transverse, with a short, triangular tip, with the sides recurved and margins irregular, the disc shallowly concave, the base broadly truncate, not deflexed, hinged on the margin to the column-foot; **column** terete, 1.5 mm long, the foot thick, 1.5 mm long, the anther, rostellum and stigma apical.

COLOMBIA: **Cundinamarca**: Salto de Tequendama near Bogotá, alt. 8,000 ft., Mar. 1843, *J. Linden 1269* (Holotype: K; Isotype: W); New Grenada, without locality, cultivated Nov. 1884, by *H. Wendland s.n.* (holotype of *P. wendlandiana*: W); Tequendama, alt. 2400-2500 m, 28 Oct. 1918, *F.W. Pennell 2650* (AMES, NY); road to La Vega, alt. 1800 m, 6 Apr. 1957, *M. Ospina 165* (AMES, COL). **Santander**: headwaters of Quebrada Chiriviti, west of Galan, alt. 7,200 ft., 9 Sept. 1944, *N.C. Fassett 25741* (AMES). **Antioquia**: Medellín, Nov. 1884, *B. Roezl s.n.* (holotype of *P. rhomboglossa*: W; isotype: AMES); "Antioquia," *G. Schmidtchen s.n.* (W). **Valle del Cauca**: Tacota, terrestrial, 1880, *E. André 486* (K); West Andes of Cali, alt. 1500-2000 m, *F.C. Lehmann 3223* (K); terrestrial, near La Ceja, cultivated by the Robledos, 19 Mar. 1989, *C. Luer 14265* (MO). **Caldas**: above Anserma Vieja, alt. 2000 m, 26 Oct. 1883, *F.C. Lehmann 3272a* (AMES, BR, G, K). **Valle del Cauca**: west Andes of Cali, alt. 1500-2000 m, *F.C. Lehmann 8223* (AMES).
ECUADOR: western flank of Andes, alt. 5,000 ft., 1855, *W. Jameson 81* (holotype of *P. ventricosa*: W). **Carchi**: Chical, alt. 1400 m, July 1991, cultivated by *F L Stevenson 91-1029-5* (MO). **Imbabura**: above Guadual on Río Blanco, alt. 1450 m, 20 Jan. 1987. *C. Luer, J. Luer & A. Hirtz 12450* (MO). **El Oro**: above Piñas, alt. ca. 1500 m, cultivated by *F L Stevenson 91-1017-6* (MO).

This species is widely distributed from the Eastern Cordillera of Colombia into northern Ecuador. Thick masses of plants over a meter across sometimes accumulate. At the base of the petiole of a large, elliptical leaf, a usually dense cluster of single, pale green flowers is borne. The dorsal sepal and synsepal are acuminate; the petals are narrowly attenuate; and the lip is subquadrate, concave centrally, broadly obtuse or truncate and apiculate. The similar *P. flaveola* of northern Ecuador is distinguished by smaller, yellow flowers, subacute sepals, broader petals and an ovate lip with the subacute apex decurved.

Pleurothallis circinata Luer, Orquideología 20: 206, 1996.

Ety.: From the Latin *circinatus*, "rolled up," referring to the shape of the lip.

Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 7-15 cm long, with a close, tubular sheath below the middle and 2-3 others at the base. **Leaf** erect, coriaceous, narrowly ovate, acute, the blade 7-11 cm long, 1-2 cm wide, cuneate below into a slender petiole 0.7-1 cm long. **Inflorescence** a congested fascicle of short racemes, 2-4 mm long, 1- to 3-flowered, borne by peduncles 1-2 mm long, with a spathe 3-5 mm long, near the apex of the ramicaul; floral bracts inflated, 2 mm long; pedicels slender, 3-4 mm long; ovary 1.5 mm long; **sepals** translucent greenish white, glabrous, the dorsal sepal ovate, acute, concave, 6.5 mm long, 3 mm wide unexpanded, 3-veined, the lateral sepals connate into an ovate, subacute, concave synsepal, 6.5 mm long, 4.5 mm wide, 6-veined; **petals** white, glabrous, narrowly linear-oblong, thickened at the acute apex, 3.25 mm long, 0.75 mm wide, 1-veined; **lip** yellow, strongly revolute into a tube, 2 mm wide, 0.6 mm long unexpanded, the apex broadly rounded in contact with the base, the base broad, subtruncate, fixed to the base of the column; **column** stout, clavate-terete, 1.5 mm long, footless, the anther, rostellum and stigma apical,

COLOMBIA: **Valle del Cauca**: Munic. of El Cairo, Cerro del Inglés, frontera Valle-Chocó, Serrania de los Paraguas, epiphytic in cloud forest, alt. 2070-2430 m, 1 Apr. 1988, *P. Silverstone-Sopkin, N. Paz, R. Eriksson, et al. 3951* (Holotype: CUVC; Isotype: MO), C. Luer illustr. 16334; same area, alt. 2260-2300 m, 3 Jan. 1987, *P. Silverstone-Sopkin, N. Paz, R.T. González, I. Cabrera, D. Garcés & A. Henao 2908* (CUVC, MO); same area, 14 May 1988, *J.L. Luteyn, P. Silverstone, M. Heredia & N. Paz 12361* (CUVC, NY). **Chocó**: Munic. of San José del Palmar, Cerro del Torrá, on plane below the summit, alt. 2500 m, 12 Jan. 1984, *P. Silverstone-Sopkin, N. Paz, A. Duque & H. Bayona 1786* (CUVC, MO); same area, alt. 2500-2550 m, 13 Aug. 1988, National Geographic Society grant 3884-88, *P. Silverstone-Sopkin, N. Paz, R.T. González, J.E. Ramos, L.H. Ramos & A. Henao 4352* (CUVC, MO). **Risaralda**: Pueblo Rico, alt. 2400 m, collected May 1993 by R. Escobar, flowered in cultivation at Colomborquídeas, 23 May 1995, *C. Luer 17555* (MO).

This species is closely related to the common and widely distributed *P. ruscifolia*. It is distinguished by the narrowly ovate leaves; flowers borne in short, one- to three-flowered racemes; broader, concave sepals; and a lip strongly revolute into a transverse tube fixed to the base of the column.

Pleurothallis cleistogama Luer, sp. nov.

Ety.: From the Latin *cleistogamus*, "cleistogamous," fertilized with a closed flower.

Species haec *P. ruscifoliae* (Jacq.) R.Br. affinis, sed flores minoribus incrassatis cleistogamis, petalis latioribus triangularibusque et labello ad medium angulato differt.

Plant medium in size to large, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 7-35 cm long, with a tubular sheath near the middle and 2-3 other sheaths at the base. **Leaf** erect, coriaceous, elliptical, acute, more or less slightly acuminate, 6-17 cm long, 1-4 cm wide, the base acuminate into a distinct petiole ca. 1 cm long. **Inflorescence** a fascicle of a few or several, simultaneous, single flowers (infrequently 2-flowered), from a spathe ca. 7 mm long at the base of the petiole; peduncles 1-3 mm long; floral bracts thin, 2-3 mm long; pedicels 4-5 mm long; ovary 2 mm long; **sepals** pale yellow-green, glabrous, the dorsal sepal ovate, acute, acuminate, concave below the middle, 4-8 mm long, 2-3 mm wide, 3-veined, the lateral sepals connate into a narrowly ovate, acute synsepal, 4-8 mm long, 2-2.5 mm wide, 4-veined; **petals** yellow-green, narrowly ovate to narrowly linear, acute, 2.5-6 mm long, 0.5-1 mm wide, faintly 3-veined; **lip** light green, ovate, acute to subacute, 1-1.5 mm long, 1-1.25 mm wide, with the disc shallowly channeled between semierect sides, sometimes acutely flexed, the base broadly truncate, concave on the end, hinged to the convex tip of the column-foot; **column** semiterete, 1.75 mm long, the foot thick, the anther, rostellum and stigma apical.

PANAMA: **Chiriquí**: Bajo Grande, above Cerro Punta, alt. 2400 m, 13 Feb. 1985, *C. Luer, J. Luer, R. Dressler & K. Dressler 10527* (Holotype: MO).

This taxon is little more than a cleistogamous form of the ubiquitous *P. ruscifolia*, but it differs from the latter in the following: the flowers are smaller with thickened sepals that are proportionately wider; thick, narrowly triangular petals that are wider; and an oblong, acute lip with acutely angled margins above the middle. The base is distinctly concave and articulated with a bulbous tip of the column-foot.

Pleurothallis cunabularis Luer, sp. nov.

Ety.: From the Latin *cunabularis*, "of a cradle," referring to the synsepal and lip.

Species haec *P. cernuae* Luer affinis, sed habitu majore, folio latiore ad basim abrupte contracto et labello subplano lateribus non incurvis differt.

Plant large, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 10-19 cm long, with a tightly fitting tubular sheath above the base and 2-3 others at the base. **Leaf** erect, coriaceous, elliptical-oblong, subacute, abruptly acuminate, 9-11 cm long excluding the petiole, 3-4.5 cm wide, broadly cuneate or rounded below, abruptly contracted into a petiole 1.2-1.5 cm long. **Inflorescence** a fascicle of successive, 1-flowered peduncles, 1.5-2.5 cm long, produced from a spathe ca. 0.5 cm long; floral bracts tubular, 4 mm long; pedicels 4-5 mm long; ovary 9 mm long; **sepals** yellow-green, translucent, glabrous, the middle sepal narrowly ovate, acute, 13 mm long, 4 mm wide, 3-veined, the lateral sepals completely connate into a deeply concave, cymbiform, acute synsepal, 12 mm long, 7 mm wide unexpanded, 6-veined; **petals** yellow, glabrous, narrowly ovate, acute, 10.5 mm long, 2 mm wide, 3-veined; **lip** yellow, transversely ovate-suborbicular, 4 mm long, 4.5 mm wide, the apex broadly rounded, minutely apiculate, the disc shallowly concave, with a small, shallowly cleft callus at the base, the base hinged to an obsolescent column-foot; **column** stout, terete, 1.5 mm long, the foot obsolescent, the anther, rostellum and stigma apical.

COLOMBIA: **Chocó**: Munic. San José del Palmar, Cerro del Torrá, between heliport and the mesa below the crest, alt. 1940-2450 m, 30 Aug. 1988, *P. Silverstone-Sopkin, N. Paz, R.T. González, J.E. Ramos, L.H. Ramos & A. Henao 4909* (Holotype: CUVC; Isotype: MO), C. Luer illustr. 18468.

This species, apparently endemic on Cerro del Torrá in the Western Cordillera, is similar to the Ecuadorian *P. cernua*, but *P. cunabularis* is larger vegetatively with broader leaves that are abruptly contracted into the petiole. The flowers of both species are produced in a fascicle of single-flowered peduncles. The sepals and petals are similar, but the lip of *P. cunabularis* is flat and slightly concave centrally instead of being concave with incurved sides.

Pleurothallis flaveola Luer & Hirtz, Lindleyana 11: 159, 1996.

Ety.: From the Latin *flaveolus*, "yellow," referring to the color of the flowers smaller than those of *P. chloroleuca* Lindl.

Plant large, epiphytic to terrestrial, densely caespitose; roots coarse. Ramicauls stout, erect, 11-40 cm long, with a tubular sheath below the middle and 2-3 others at the base. **Leaf** erect, coriaceous, elliptical-ovate, acute, 10-30 cm long, 4-10 cm wide, the base cuneate into a channeled petiole 1.5-3 cm long. **Inflorescence** a fascicle of numerous, simultaneous flowers produced singly or in 2- to 3-flowered racemes, 2-3 cm long, subtended by a spathe ca. 1 cm long, at the apex of the ramicaul; peduncles 3-10 mm long; floral bracts 3-4 mm long; pedicels 6-11 mm long; ovary 3-5 mm long; **sepals** yellow, glabrous, the dorsal sepal elliptical, acute, concave, 5-6 mm long, 3-4 mm wide expanded, 3-veined, the lateral sepals connate into an ovate, narrowly obtuse synsepal, 5-6.5 mm long, 2.5-3 mm wide, 4-veined; **petals** yellow, glabrous, narrowly ovate, acute, 3-4 mm long, 1 mm wide, 3-veined; **lip** yellow, more or less marked with purple, subquadrate-subcordate, 1.5 mm long, 1-1.4 mm wide, the apex acute, deflexed, the margins minutely crenulate, the disc shallowly concave between a low pair of broad calli, the base hinged to the column-foot; **column** stout, terete, 1.5 mm long, the foot thick, bulbous, the anther, rostellum and stigma subapical.

ECUADOR: **Pichincha**: terrestrial on the road embankment between Chiriboga and Santo Domingo, alt. 1500 m, 28 May 1988, *C. Luer & A. Hirtz 13713* (Holotype: MO; Isotype: K); same area, alt. 1350-1400 m, 8 July 1979, *B. Løjtnant & U. Molau 15696* (AAU, GB). **Carchi**: epiphytic in forest east of Maldonado, alt. 1550 m, 17 Mar. 1991, *C. Luer, J. Luer, A. Hirtz, X. Hirtz & J. del Hierro 15124* (MO). **Azuay**: Ponce Enrequez, between Guayaquil and Machala, alt. 800 m, May 1985, *A. Hirtz 2574* (MO). **Esmeraldas**: epiphytic in wet forest west of Lita, alt. 800 m, Nov. 1988, *A. Hirtz 3623, 3908* (MO), C. Luer illustr. 17108; same area, alt. 720-850 m, 13 May 1990, *C. H. Dodson, A. Gentry, B. Boyle & D. Rubio 18295* (MO).

This large species, apparently limited to the western slopes of the Andes of northern Ecuador, is closely related to *P. chloroleuca* within whose distribution it occurs. *Pleurothallis flaveola* differs from *P. chloroleuca* (syn. *P. ventricosa*) in considerably smaller, yellow flowers; shorter, acute, non-acuminate sepals; shorter petals; and a smaller lip with the deflexed apex acute (not broadly truncate and apiculate). Although the flowers are usually produced singly (or two successively), occasionally short, simultaneously two- to three-flowered racemes are produced.

Pleurothallis helleri Hawkes, Phytologia 14: 12, 1966.

Ety.: Named in honor of Alphonse H. Heller who first collected this species.

Plant large, epiphytic, caespitose; roots coarse. Ramicauls stout, erect, 10-35 cm long, with a tubular sheath below the middle and 2-3 others at the base. **Leaf** erect, coriaceous, nervose, elliptical, acute, slightly acuminate, 8-20 cm long, 3-6 cm wide, the base cuneate into a petiole 1-2 cm long. **Inflorescence** a fascicle of several, simultaneous, laxly few-flowered racemes, 5-10 cm long including the peduncle 1-2 cm long, subtended by a spathe ca. 0.5 cm long, at the apex of the ramicaul; floral bracts oblique, less than 1 mm long; pedicels 2.5-3 mm long; ovary 2-2.5 mm long; **sepals** yellow-green, glabrous, the dorsal sepal narrowly ovate, acute, concave below the middle, 6-7.5 mm long, 2.5 mm wide, 3-veined, the lateral sepals connate into a narrowly ovate, narrowly obtuse to acute synsepal, 6-7.5 mm long, 2.75-3 mm wide, 4-veined; **petals** yellow, glabrous, narrowly ovate, attenuate, acute, 6-7 mm long, 0.6-0.75 mm wide, 1-veined; **lip** greenish white, thick, ovoid, 1.5 mm long, 1 mm wide, the apex thick, obtuse to rounded, the sides below the middle erect, marked with purple, the disc with a pair of low, purple carinae below the middle, the base broad, concave on the end, in apposition to the convex column-foot, hinged beneath; **column** stout, semiterete, 1.5 mm long, the foot thick, bulbous, the anther, rostellum and stigma subapical.

NICARAGUA: **Chontales**: Cordillera Amerrisque, alt. 2,700 ft., Dec. 1962, *A.H. Heller* (Holotype: F; Isotype: AMES).
ECUADOR: **Los Ríos**: Río Palenque, alt. ca. 600 m, Jan. 1975, *C.H. Dodson 5407* (SEL), C. Luer illustr. 200. **Esmeraldas**: terrestrial in forest behind Deforno Camp at Playa Grande, 25 June 1966, *C. Jativa & C. Epling 1023* (US).

This species is found in two distant localities, the first known in Nicaragua, and the second, in lowland western Ecuador. It has not been seen in the vast area in between. Dodson has suggested (pers. comm.) that this type of distribution could be the result of ancient Indian trading.

Pleurothallis helleri is characterized by a fascicle of several, loosely flowered racemes up to 10 centimeters long borne at the base of the petiole of a large leaf. The dorsal sepal and synsepal are similar and acute; the petals are narrowly attenuate; and the small lip is thick with erect margins and a pair of central calli. The broadest part of the lip is the base that is concave on the end to accommodate a thick, convex column-foot. Similar articulations are seen in some species of subsection *Macrophyllae-Fasciculatae*, and in all species of subgenus *Crocodeilanthe* and genus *Barbosella*. The articulation is present but to a lesser degree in *P. ruscifolia*.

Pleurothallis medusa Luer, Lindleyana 12: 51, 1997.

Ety.: Named for the mythological Medusa with hair of snakes, in allusion to the long, entwined sepals in the congested inflorescence.

Plant large. Ramicauls slender, incomplete, up to 25 cm long in the specimens, with a tubular sheath near the middle. **Leaf** erect, coriaceous, elliptical-ovate, acute, acuminate, 13-15 cm long, 2.5-3.5 cm wide, the base cuneate into a channeled petiole ca. 5 mm long. **Inflorescence** a fascicle of numerous, simultaneous, single flowers, subtended by a spathe ca. 10 mm long, 7 mm wide, ca. 15 mm below the apex of the ramicaul; peduncles ca. 2 mm long; floral bracts 3-5 mm long; pedicels 5 mm long; ovary 3 mm long; flowers appear to have been yellow; **sepals** glabrous, the dorsal sepal ovate, acute, concave in the lower quarter, narrowly long-acuminate above, 17 mm long, 5 mm wide expanded, 3-veined, the lateral sepals connate into a narrowly triangular synsepal, 16 mm long, 3 mm wide, 3-veined, narrowly retuse at the tip; **petals** glabrous, narrowly ovate, acute, 7 mm long, 1.25 mm wide, 3-veined; **lip** thick,

ovoid, 3-lobed, 2.75 mm long, 2 mm wide across the lobes, the apex obtuse, shortly acuminate, with the margins minutely crenulate, the lateral lobes small, erect, subacute, antrorse, below the middle, the disc shallowly concave centrally, the base hinged to the column-foot; **column** stout, terete, 1.5 mm long, the foot thick, the anther, rostellum and stigma apical.

?COSTA RICA: "San José," alt. 8,800 ft., 30 Apr. 1880, *?O-1613* (Holotype: W).

This specimen consists of several ramicauls that have been broken off somewhere between the middle and the base. Who collected this species at some place called San José in 1880 is a mystery. His name is a cryptic Greek Phi, and his collection number is 1613. Should any reader be able to give a clue to the locality or the identity of the collector, it would be much appreciated.

The species is similar to *P. chloroleuca*. It is distinguished by larger flowers with long-attenuate sepals; proportionately short petals; and a three-lobed lip with the lateral lobes small, erect and below the middle.

Pleurothallis notabilis Luer & Escobar, Orquideología 14: 162, 1981.

Ety.: From the Latin *notabilis*, "noteworthy," referring to the unusual leaves and inflorescence.

Plant large, epiphytic, caespitose; roots coarse, flexuous. Ramicauls erect, terete, stout, 18-30 cm long, with a close tubular sheath above the middle and a loose tubular sheath at the base. **Leaf** erect, rigid, thinly coriaceous, nervose, sulcate along the veins, broadly obovate, subpetiolate, 14-18 cm long, 6-10 cm wide, obtuse to rounded at the apex, the base cuneate into the thickened, channeled base. **Inflorescence** a dense fascicle of radiating, multiple (up to 30), laxly few-flowered racemes, 4-6 cm long, from the base of the leaf; floral bracts infundibular, 3-5 mm long; pedicel 9-12 mm long; ovary 2 mm long; **sepals** yellow-green suffused with light purple, glabrous, the dorsal sepal ovate, suborbicular and concave in the lower third, the apical two-thirds narrowly acuminate, acute, 8 mm long, 3.5 mm wide, the lateral sepals connate into a narrowly ovate, acuminate, acute lamina, 7 mm long, 3 mm wide; **petals** yellow-green spotted with purple, linear-ovate, acute, 5 mm long, 0.6 mm wide; **lip** green, marked with purple, ovate, arcuate, 1.5 mm long, 1.1 mm wide, narrowed with minutely undulate margins above the middle, the apex rounded, apiculate, the base truncate; **column** white, spotted with purple, stout, 1.3 mm long, with a short, thick foot.

COLOMBIA: **Antioquia**: Munic. of Sonsón, between Sonsón and Argelia, alt. 2500-2800 m, 30 Sept. 1973, collected by R. Escobar et al., cultivated at La Ceja by M. & O. Robledo, 19 Oct. 1977, *C. Luer 2085* (Holotype: SEL; Isotype: JAUM).

This notable species is apparently rare in the Central Cordillera of Colombia where it is known from only the original collection. The broad, obovate, convex leaves are thin and sulcate along the veins. Numerous short, few-flowered racemes radiate simultaneously from the base of the leaf. The dorsal sepal is concave in the lower third and narrowly acuminate above. The synsepal is narrow and flat; the petals are narrowly attenuate; and the lip is small, ovate and recurved, similar to the lip of *P. ruscifolia*.

Pleurothallis ruscifolia (Jacq.) R.Br., Hort. Kew. ed. 2, 5: 211, 1813.

Ety.: From the Latin *ruscifolius*, "with a leaf like a *Helleborine rusci majorus*."

Syn.: *Epidendrum ruscifolium* Jacq., Enum. 29, 1760, based on Plum. Ic. 176, f. 2, 1759.

Syn.: *Dendrobium ruscifolium* (Jacq.) Sw., Nova Acta Regiae Soc. Sci. Upsal. 6: 84, 1799.

Syn.: *Pleurothallis succosa* Lindl., Gen. Sp. Orch. 5, 1836.
Ety.: From the Latin *succosus*, "succulent," referring to the leaves.

Syn.: *Pleurothallis multicaulis* Poepp. & Endl., Nov. Gen. Sp. 1: 47, 1836.
Ety.: From the Latin *multicaulis*, "many-stemmed," referring to numerous ramicauls.

Syn.: *Humboldtia ruscifolia* (Jacq.) Kuntze, Rev. Gen. Pl. 668, 1891.

Syn.: *Humboldtia succosa* (Lindl.) Kuntze, Rev. Gen. Pl. 668, 1891.

Syn.: *Pleurothallis glomerata* Ames, Sched. Orch. 4: 21, 1923.
Ety.: From the Latin *glomeratus*, "produced densely into a head," referring to the inflorescence.

Syn.: *Pleurothallis ruscifolia* var. *caquetana* Schltr., Repert. Beih. 27: 55, 1924.
Ety.: Named for the territory of Caquetá where the plant was collected.

Plant medium in size to large, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 7-35 cm long, with a tubular sheath near the middle and 2-3 other sheaths at the base. **Leaf** erect, coriaceous, elliptical, acute, more or less slightly acuminate, 6-17 cm long, 1-4 cm wide, the base acuminate into a distinct petiole ca. 1 cm long. **Inflorescence** a fascicle of a few or several, simultaneous, single flowers (infrequently 2-flowered), from a spathe ca. 7 mm long at the base of the petiole; peduncles 1-3 mm long; floral bracts thin, 2-3 mm long; pedicels 4-5 mm long; ovary 2 mm long; **sepals** pale yellow-green, glabrous, the dorsal sepal ovate, acute, acuminate, concave below the middle, 4-8 mm long, 2-3 mm wide, 3-veined, the lateral sepals connate into a narrowly ovate, acute synsepal, 4-8 mm long, 2-2.5 mm wide, 4-veined; **petals** yellow-green, narrowly ovate to narrowly linear, acute, 2.5-6 mm long, 0.5-1 mm wide, faintly 3-veined; **lip** light green, ovate, acute to subacute, 1-1.5 mm long, 1-1.25 mm wide, with the disc shallowly channeled between semierect sides, sometimes acutely flexed, the base broadly truncate, concave on the end, hinged to the convex tip of the column-foot; **column** semiterete, 1.75 mm long, the foot thick, the anther, rostellum and stigma apical.

MARTINIQUE: without collection data, *Plumier s.n.* (Holotype of *Epidendrum ruscifolium*: Plumier's drawing); without collection data, *Jacquin s.n.* (W). Cote Navire, 1869, *M. Hahn 531* (AMES, K). L'Alma, du Pont, alt. 500 m, 27 Mar. 1945, *H. & M. Stehlé 5810* (AMES, P); Pitons du Carbet, Plateau Boucher, alt. 700 m, 14 Apr. 1979, *A. Raynal-Roques & J. Jérémie 21194* (AMES, P, UPRRP); Plateau Michel, 25 Apr. 1975, *J. Fournet 2360* (GUAD).
GUADELOUPE: Matouba, Morne Palmiste, alt. 450-1000 m, 1892, *P. Duss 3343* (US). Panel a Fumée, alt. 800 m, 22 Feb. 1936, *Stehlé 349* (AMES, P); Chemin du Morne Léger, 21 May 1989, *J. Fournet 4547* (GUAD). Basse Terre, Massif de la Soufriere, alt. 900 m, 10 Aug. 1973, *C. & F. Sastre & J. & J. Jérémie 1939* (AMES, GUAD, P).
DOMINICA: *Dr. Imray 269* (K); Feb. 1882, *H. von Eggers 965* (K); near Landat, alt. 600 m, 1881, *H. von Eggers 666* (AMES, BR, JE, M, W). Summit of Morne Plat Pays, alt. 981 m, 3 Mar. 1940, *W. & B. Hodge 1656* (AMES); Laudat, 13 Mar. 1946, *Pamela Beard 1465* (AMES, K).
ST. VINCENT: alt. 1,500-2,500 ft., 1890, *H.H. Smith & G.W. Smith 414* (K).
ST. LUCIA: Savanne Edmund District, southeast of Piton Troumassée, alt. 1,800-2,000 ft., 7 May 1958, *G.R. Proctor 17913* (AMES).
GRENADA: 14 May 1891, *R. V. Sherring s.n.* (K); Azimar Mountain, 18 Nov. 1905, *W.E. Broadway s.n.* (AMES); south of the Grand Etang, 24 Feb.-6 Mar. 1950, *R.A. Howard 10678* (AMES).
PUERTO RICO: Near Adjuntas, 27 May 1886, *P. Sintenis 4408* (AMES, BR, K, US, W); Sierra de Luquillo, July 1885, *P. Sintenis 1406* (BREM, JE, K, W); near Baranquitas, alt. 1130 m, 30 Oct. 1885, *P. Sintenis 2335* (W). Sierra de Naguabo, Monte El Duque, 8 Mar. 1914, *J.A. Schafer 2222* (NY, US); Luquillo Mts., Catalina-Yunque trail, 23 Feb. 1923, *N.L. Britton & E.M. Bruner 7580* (AMES, NY).
DOMINICAN REPUBLIC: **De La Vega**: July 1912, *M. Fuertes 1805* (AMES, K, US, W); near Constanza, alt. 1250 m, Aug. 1910, *H. von Türckheim 3526* (AMES, K, M). **Domingo**: Cord. Central, alt. 300 m, 5 May 1929, *E.L. Ekman 12384* (S, US); **Peravia**: El Manaclar, San José de Ocoa, alt. 4,000 ft., 6 July 1982, *T. Zanoni, M. Mejía & J. Pimentel 21312* (AMES, NY). **Puerto Plata**: Sierra de Yaroa, Arroyo del Toro, alt. 800-900 m, 29 Aug. 1968, *A.H. Liogier 12390* (AMES, NY). Loma Isabel de Torre, alt. 770 m, 3 July 1887, *H. von Eggers 2763* (BREM).
HAITI: **Dept. du Nord**: vicinity of Marmelade, alt. 800 m, 20 Dec. 1925, *E.C. Leonard 8366* (AMES, US); Morne Basil, alt. 1300-1450 m, 15 Nov. 1924, *E. L. Ekman 2523* (K); Massif du Nord, Anse-a-Foleur, Morne Colombeau, alt. 900 m, 20 June 1925, *E.L. Ekman 4358* (AMES, S); Morne des Commissaires, Source Royer, alt. 3,500 ft., 28 July 1944, *J.T. Curtis 11* (AMES).
JAMAICA: Nov. 1885, *D. Morris s.n.* (K). *D. Morris 2071* (W). St. Thomas, Maccasucker Bump, alt. 825-1025 m, 25 June 1926, *W.R. Maxon 9559* (AMES). Portland: between Section and Hardwar Gap, alt. 3,400 ft., 8 Mar. 1963, *G.R. Proctor 23292* (AMES). Clarendon, Glenwood Springs, bettween Balcarres and Sunbury, alt. 3,100 ft., 29 Dec. 1974, *G.R. Proctor 34553* (AMES).
CUBA: Oriente, Sept. 1859-Jan. 1860, *C. Wright 1705* (AMES, K); Oriente, Crest of Sierra Maestra between Pico Turquino and La Bayamesa, alt. 1350 m, 27-28 Oct. 1941, *C.V. Morton & J. Acuña 3709* (AMES, K, US); Loma de San Juan (Gato), July 1921, *Bro. Leon 10546* (HAJB); Loma del Gato, July 1936, *J. Acuña 10643* (HAC, HAJB); Sierra Maestra, Alto de la Valenzuela, alt. 3,800-4,000 ft., 11 Aug. 1955, *M. López F. 2282* (HAC, HAJB); Sierra Maestra, El Uvero, camino a El Manguito, alt. 400-600 m, Apr. 1969, *J. Bisse & H. Lippold 14485* (JE).
TRINIDAD: Heights of Aripo, 10 Jan. 1922, *W.E. Broadway 9883* (AMES, K).
FRENCH GUYANA: Region de Paul Isnard, Massif du Décou Décou, alt. 550, 10 Feb. 1983, *C. Feuillet 692* (BR, CAY); Mont Atachi Bacca, Région de l'Inini, alt. 520 m, 9 Jan. 1989, *J.J. De Granville et al. 10491* (B, CAY, FTG, NY, P, U, US).
GUYANA: Montagne de l'Inini, alt. 780 m, 17 Aug. 1985, *J.J. de Granville et al. 7618* (CAY, K).
PANAMA: **Coclé**: Loma del Tigre, north of El Valle, alt. 1000 m, 16 Nov. 1946, *P.H. Allen 3814* (BR, MO).
COSTA RICA: **Heredia**: Desengaño, *Wendland 1260* (W). **Cartago**: Sitio Ortiz, 1867, *A. Endres 123* (W); La Palma, alt. 1700-2000 m, July 1895, *A. Tonduz 9668* (AMES); Cachi, received June 1920 from *C. H. Lankester 357* (holotype of *P. glomerata*: K). **Alajuela**: San Carlos, Zapote, alt. 1575 m, 4 July 1938, *A. Smith H-837* (K). **Puntarenas**: Monteverde Reserve, alt. 1500 m, 8 July 1992, *S. Ingram & K. Ferrell-Ingram 1488* (CR, K, SEL).

VENEZUELA: "Caracas," alt. 1600 m, 1842-43, *N. Funcke 81* (W). Roraima, *Schomburgk 971* (W). Isla Margarita, alt. 450 m, 12 Aug. 1903, *J.R. Johnston 225* (W).
COLOMBIA: **Antioquia**: near Yarumalito, alt. 2350 m, 15 May 1985, *C. Luer, R. Escobar & E. Valencia 11379* (MO). **Valle del Cauca**: Cali, between Cali and Buenaventura, alt. 1900 m, 19 Mar. 1989, *J. Giraldo-Gensini 77* (MO, TULV). **Putumayo**: Mocoa, Caquetá, alt. 530 m, Jan. 1921, *W. Hopp 72* (holotype of var. *caquetana* destroyed at B).
ECUADOR: **Carchi**: north of Río Mira, alt. 900 m, 16 Feb. 1996, *A. Hirtz & X. Hirtz 6301* (MO). **Imbabura**: Los Cedros Reserve, alt. 1500 m, 25 Mar. 1996, *S. Dalström, S. Ingram & K. Ferrell-Ingram 2223* (MO). **Esmeraldas**: west of Lita, alt. 300 m, 12 Jan. 1992, *C. Luer et al. 15588* (MO). **Tungurahua**: Cashurco near Río Negro, 18 Mar. 1969, *H. Lugo 812* (GB). **Napo**: Río Bueno, 22 Feb. 1968, *G. Harling, G. Storm & B. Ström 7169* (GB). **Pastaza**: near Mera, alt. ca. 1000 m, 11 Mar. 1969. *H. Lugo 814* (GB). **Morona-Santiago**: between Limón and Macas, alt. 700 m, 28 Mar. 1974, *G. Harling & L. Andersson 12930* (GB). **Zamora-Chinchipe**: Cordillera del Condor, alt. 950 m, 11 Feb. 1993, *S. Dalström, T. Höijer & H. Wanntorp 1857* (MO).
PERU: without locality, 1797, **Pavón s.n.** (type of *P. succosa*: M, W); Cuchero, Oct. 1829, *E. Poeppig 1430* (holotype of *P. multicaulis*: W; isotype: AMES).
BOLIVIA: **La Paz**: Larecaja, Mapirí, 1892, *M. Bang 1567* (W). **Cochabamba**: old road from Villa Tunari to Cochabamba, alt. 700 m, 30 Jan. 1997, *C. Luer et al. 18315* (MO).
BRAZIL: **Amazonia**: Terr. of Roraima, vicinity of Auaris, alt. 760-800 m, 6 Feb. 1960, *G.T. Prance et al. 9665, 9832* (K, NY). **Rio de Janeiro**: May 1896, *Reiner s.n.* (W).

This species is perhaps the most common and most widely distributed member of the Pleurothallidinae, and it is also the type of the genus. Numerous specimens are deposited in all herbaria dealing with the Neotropics. Although variable in size, it is easily recognized. The elliptical leaves are more or less acuminate at both ends. The small, delicate, yellowish white flowers emerge from a small spathe at the base of the petiole of the leaf. Most peduncles are single-flowered, but a second flower often follows, or two are produced simultaneously in a loose raceme. The dorsal sepal and synsepal are acute; the petals are narrow and shorter; and the lip is ovate and acute. The closely allied *P. chloroleuca* and *P. flaveola* are much larger, but there are intermediate sizes.

Pleurothallis valvola Luer & Hirtz, Lindleyana 3: 149, 1988.

Ety.: From the Latin *valvola*, "a small pod, or shell," referring to the appearance of the flowers.

Plant small, epiphytic, caespitose; roots slender, densely fasciculate. Ramicauls slender, erect, round in cross section, 3-7 cm long, with close, tubular sheaths above the base. **Leaf** erect, coriaceous, narrowly ovate, acute, 5-7.5 cm long including a petiole 0.7-1 cm long, 0.6-1.2 cm wide, the base cuneate into the petiole. **Inflorescence** a dense fascicle of solitary, successive flowers borne from an oblique, foliaceous spathe 4-8 mm long, 2-3 mm wide, from the side of the ramicaul 2-3 mm below the abscission layer; peduncles abbreviated, ca. 1 mm long, confined within the spathe with the floral bract 2-4 mm long, and much of the pedicel 5-8 mm long; ovary 2.5 mm long; **sepals** light green or yellow, more or less suffused with rose, the dorsal sepal ovate, obtuse, concave, 3 mm long, 2.5 mm wide, 3-veined, the lateral sepals connate into a transversely ovate, obtuse, minutely bifid synsepal, 3 mm long, 3.25 mm wide, 4-veined; **petals** linear-oblong, obtuse, 3.5 mm long, 0.8 mm wide, 3-veined; **lip** yellow, ovate-trilobed, 2.75 mm long, 1 mm wide, the apex obtuse, the disc shallowly concave, the basal lobes thin, rounded, flanking the column, the base subtruncate, firmly hinged to the base of the column; **column** stout, cylindrical, 1 mm long, 0.5 mm broad, the anther and single-lobed stigma apical, the foot rudimentary.

ECUADOR: **Morona-Santiago**: epiphytic in cloud forest, Cordillera del Cutucú, alt. 1500 m, 5 Feb. 1987, *C. Luer, J. Luer, & A. Hirtz 12656* (Holotype: MO); Cordillera del Condor, alt. 1050 m, 19 Feb. 1986, *C. Luer, J. Luer, A. Hirtz, W. Flores & A. Embree 11925* (MO).

This little species from southeastern Ecuador is characterized by shortly petiolate, narrowly ovate leaves borne by slender ramicauls of about the same length. The inflorescence is a fascicle of solitary flowers produced laterally from the ramicaul from a small spathe a short distance below the abscission layer. The dorsal sepal and the synsepal are obtuse and concave; the petals are linear; and the lip is 3-lobed with rounded, basal lobes to either side of the essentially footless column.

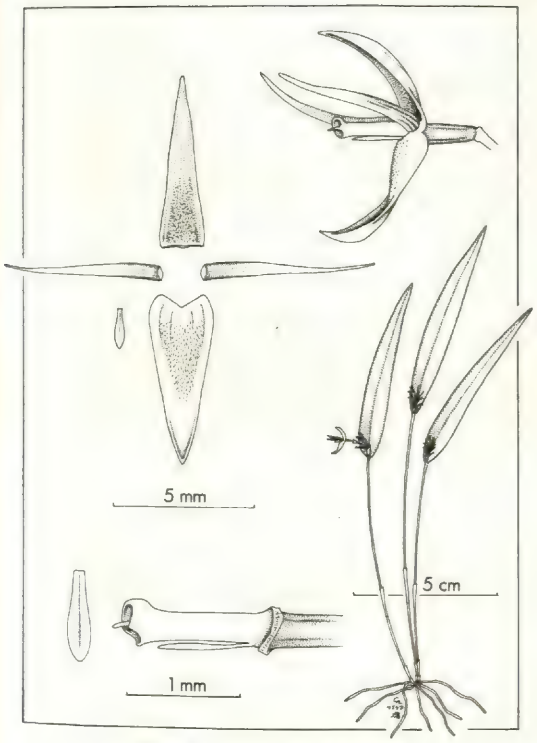


Fig. 1. Pleurothallis abortiva

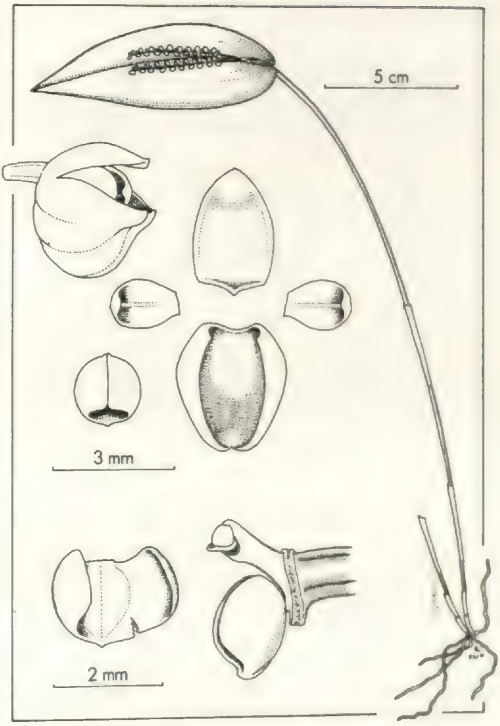


Fig. 2. Pleurothallis truncata

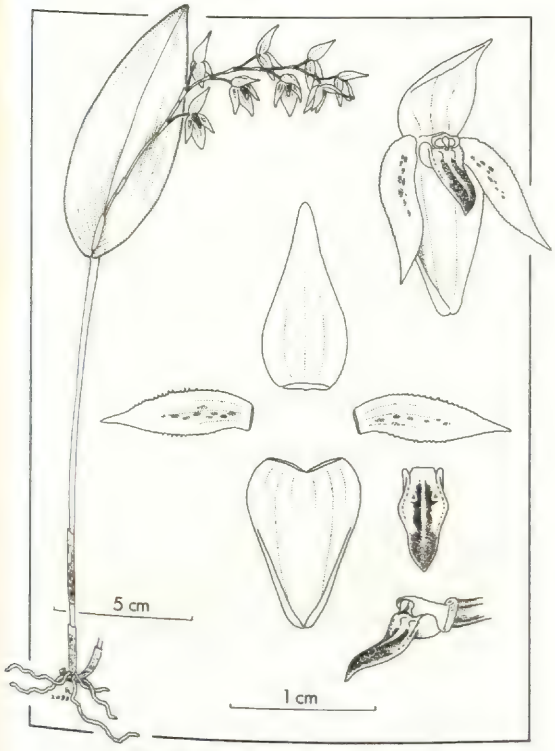


Fig. 3. Pleurothallis alvaroi

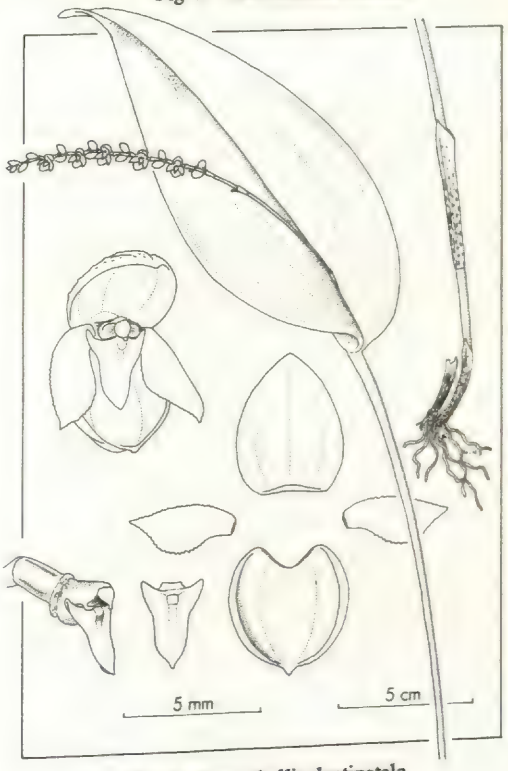


Fig. 4. Pleurothallis dentipetala

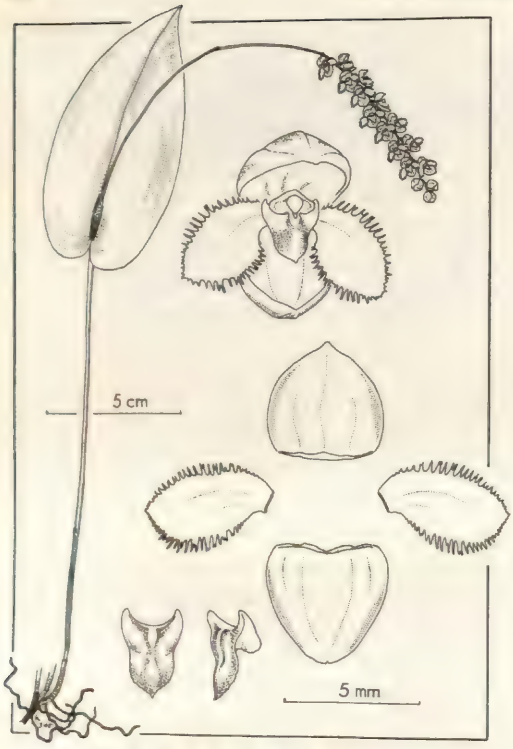


Fig. 5. Pleurothallis dentipetala

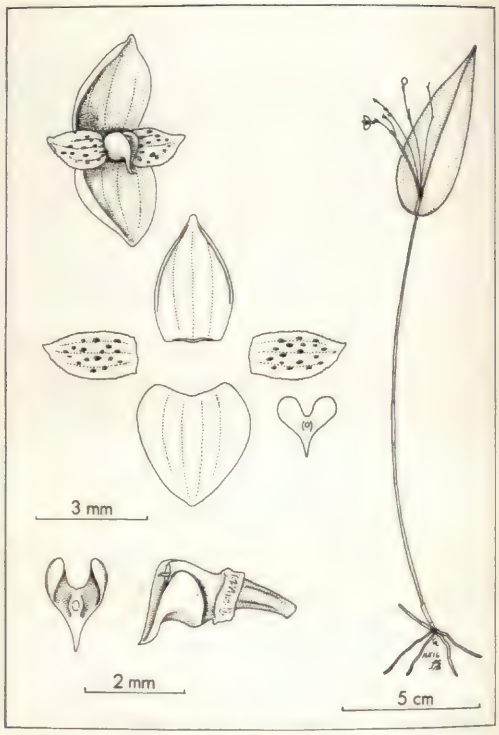


Fig. 6. Pleurothallis dukei Luer

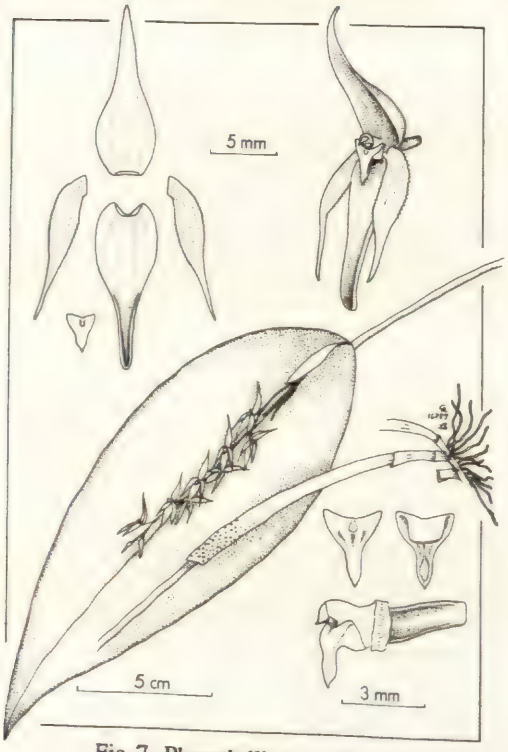


Fig. 7. Pleurothallis gomezii

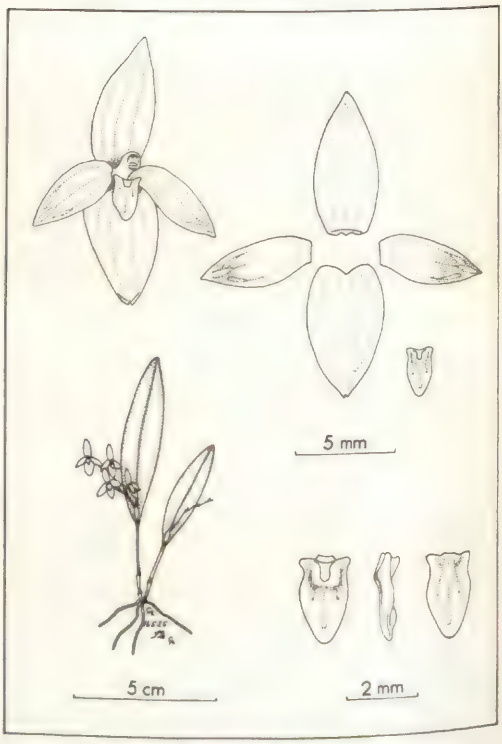


Fig. 8. Pleurothallis hammellii

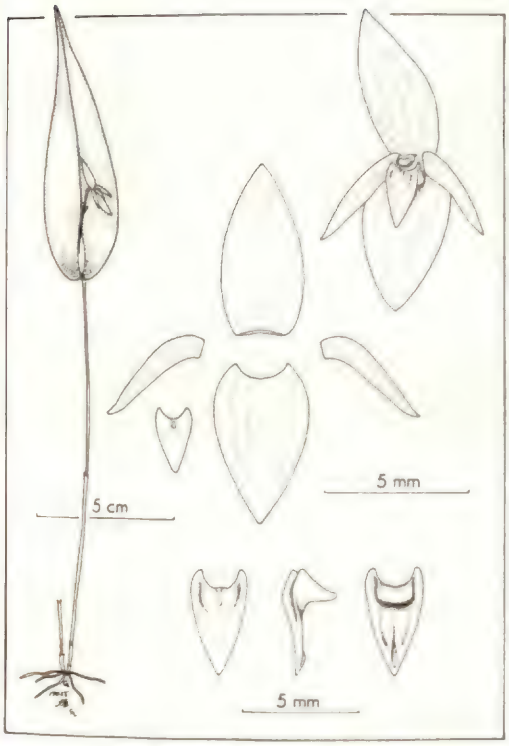


Fig. 9. Pleurothallis imitor

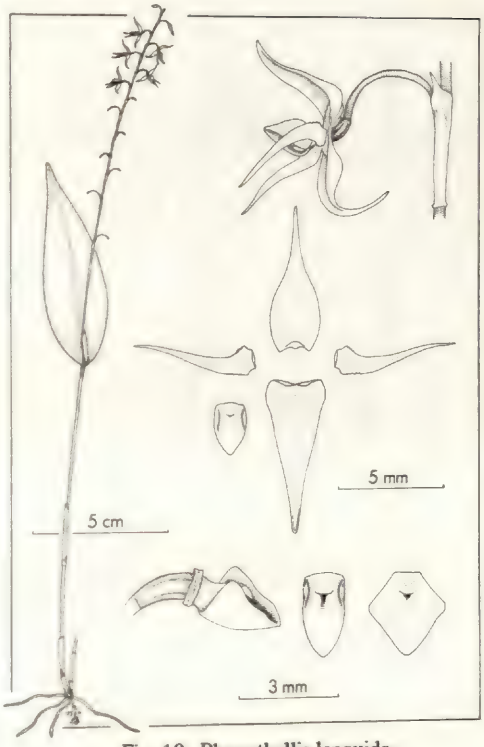


Fig. 10. Pleurothallis languida

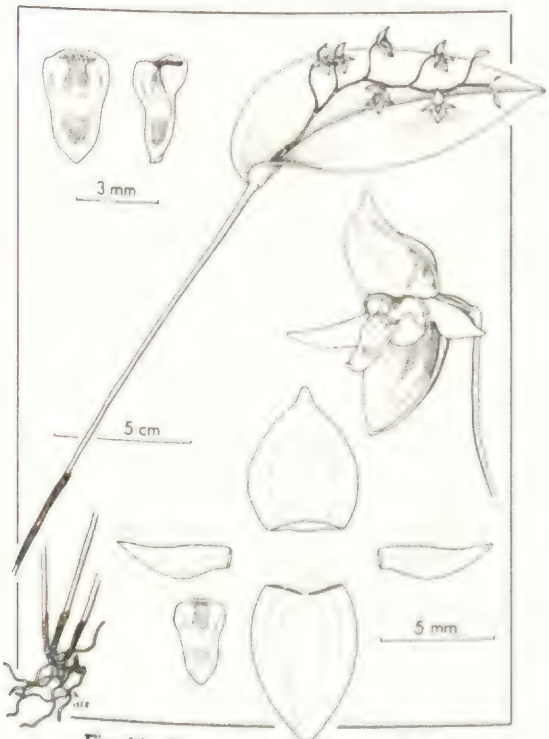


Fig. 11. Pleurothallis longipedicellata

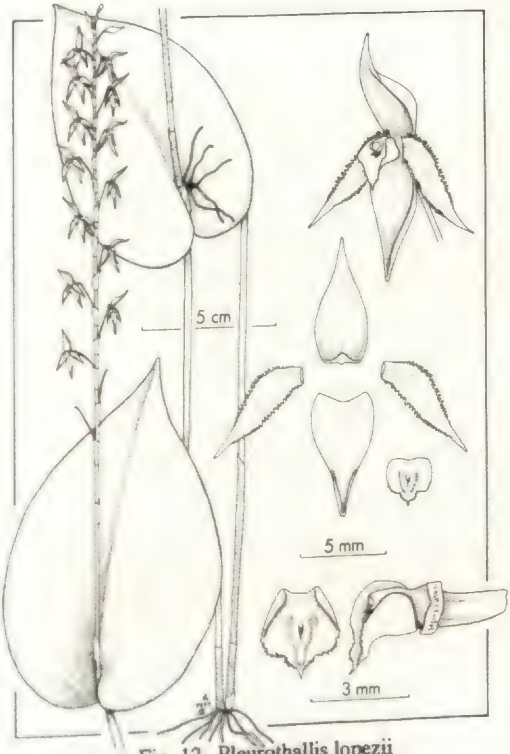


Fig. 12. Pleurothallis lopezii

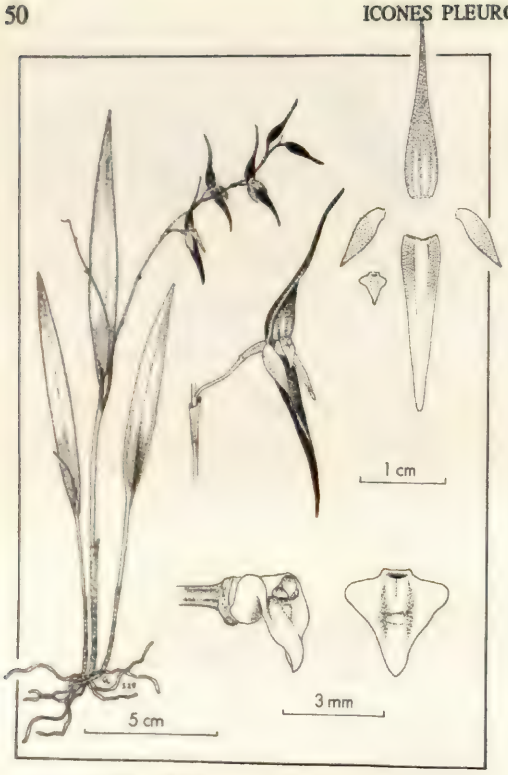


Fig. 13. Pleurothallis luctuosa

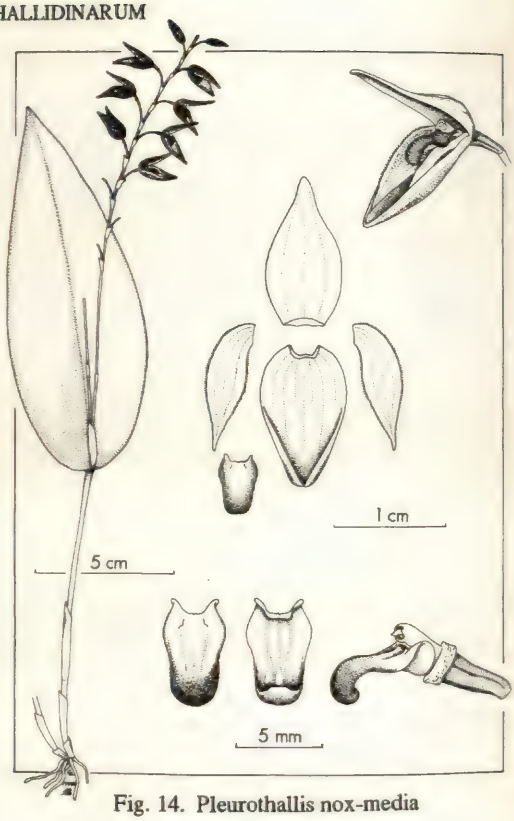


Fig. 14. Pleurothallis nox-media

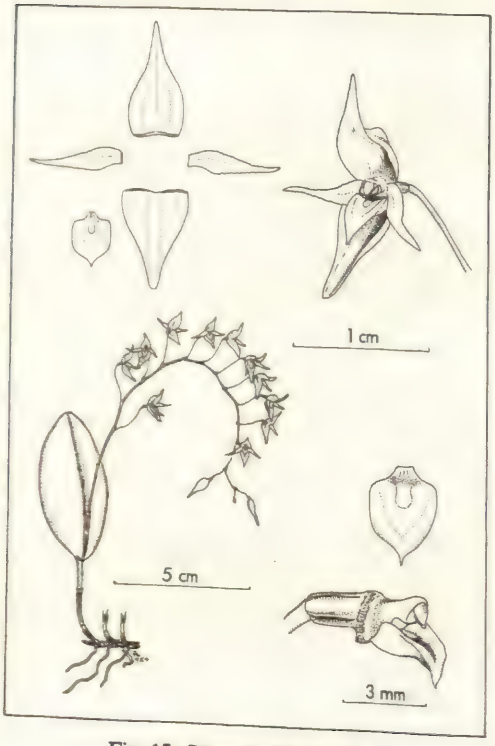


Fig. 15. Pleurothallis pallida

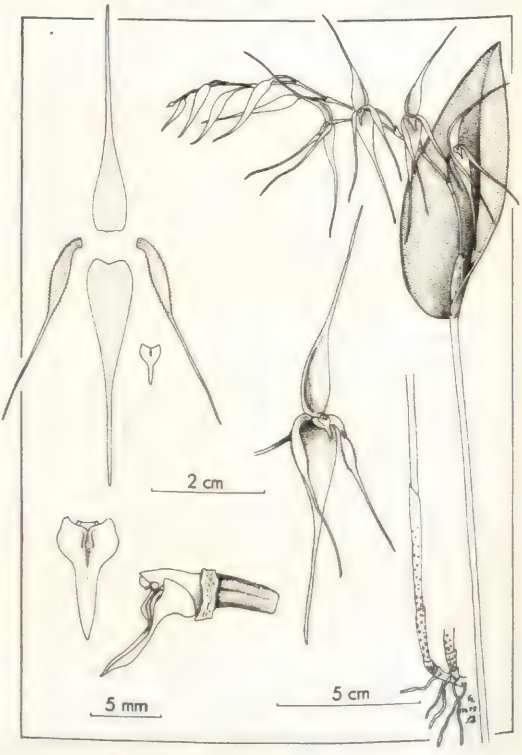


Fig. 16. Pleurothallis phalangifera

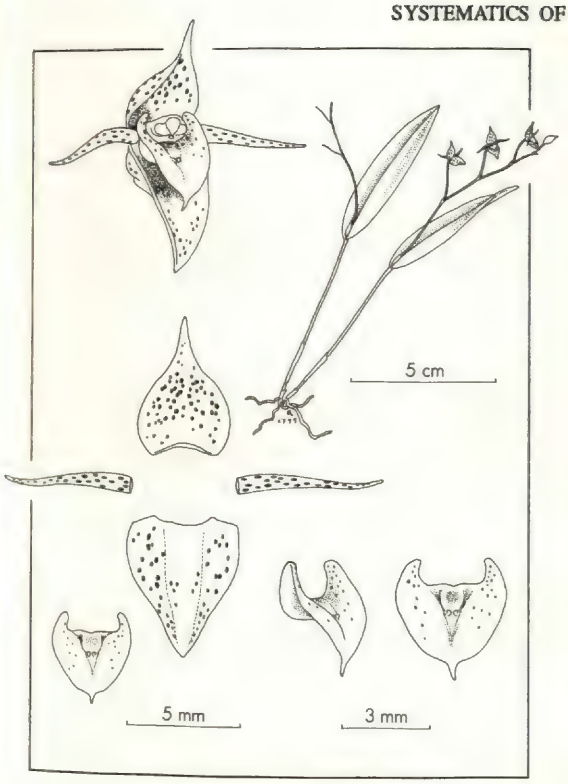


Fig. 17. Pleurothallis polysticta

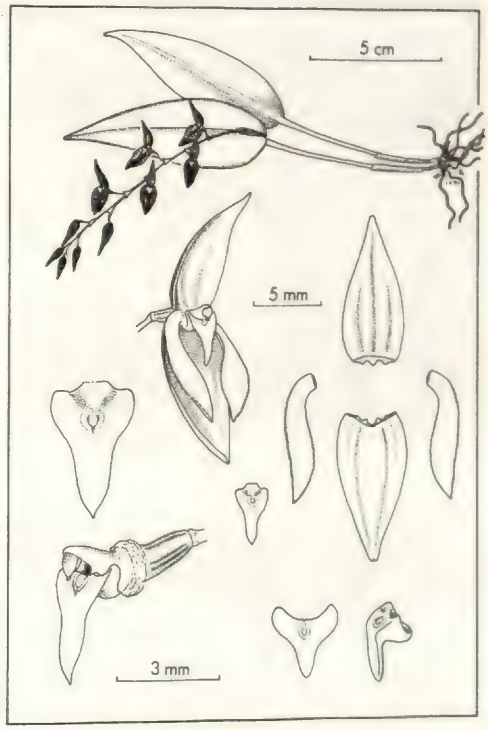


Fig. 18. Pleurothallis rowleei

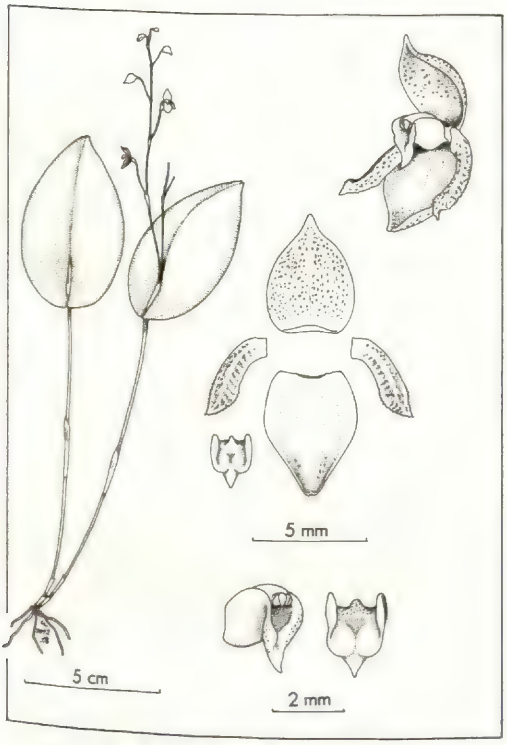


Fig. 19. Pleurothallis sanluisii

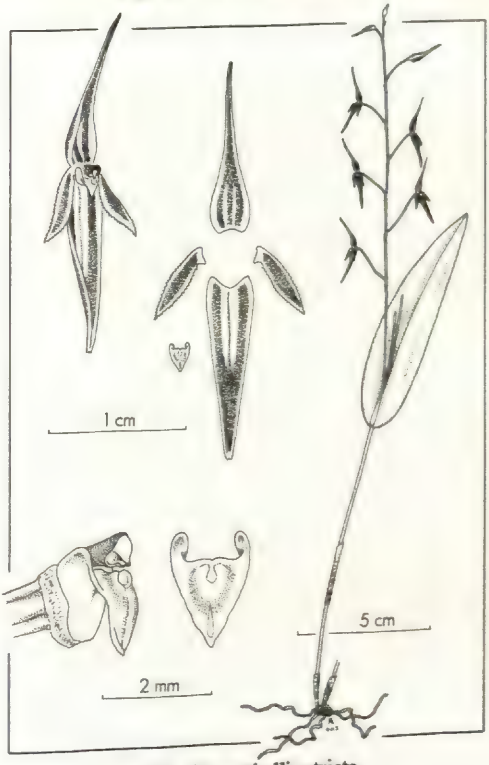


Fig. 20. Pleurothallis stricta

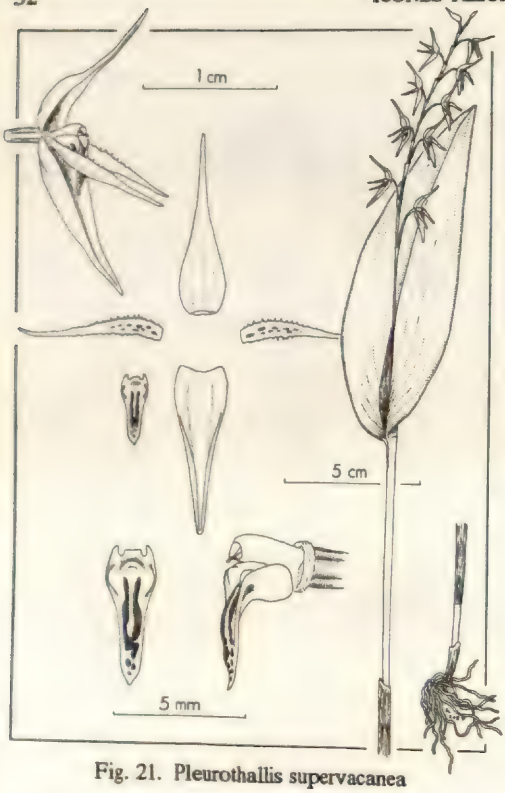


Fig. 21. Pleurothallis supervacanea

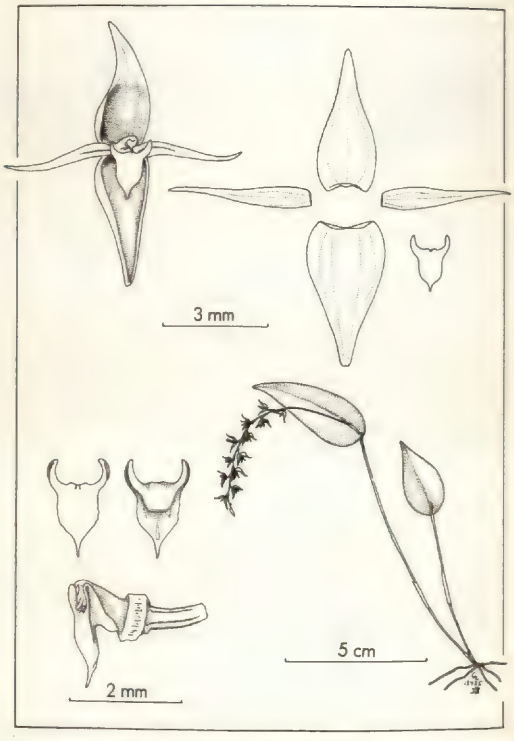


Fig. 22. Pleurothallis tryssa

Fig. 23. Pleurothallis vieirae

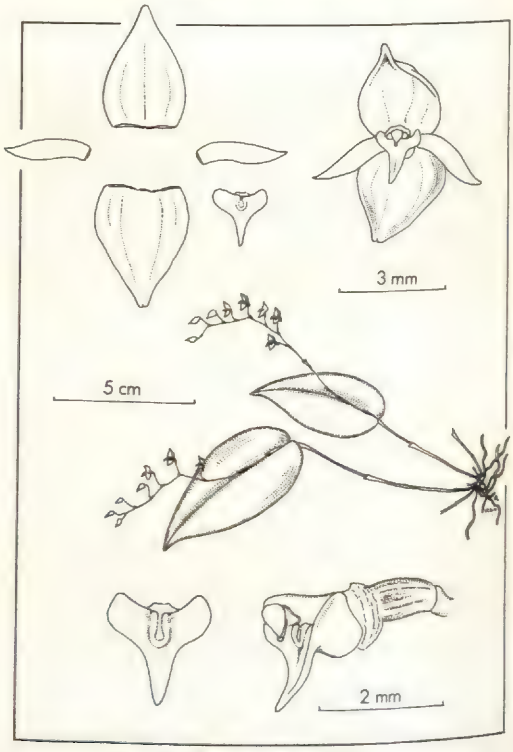


Fig. 24. Pleurothallis volcanica

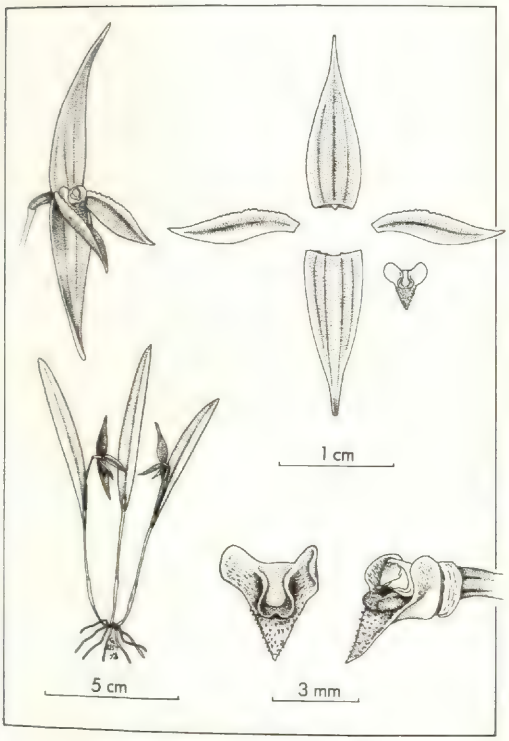


Fig. 25. Pleurothallis allenii

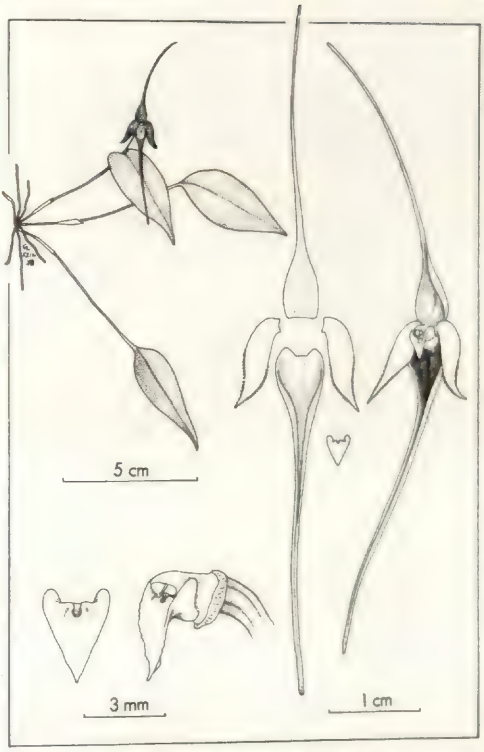


Fig. 26. Pleurothallis amphigya

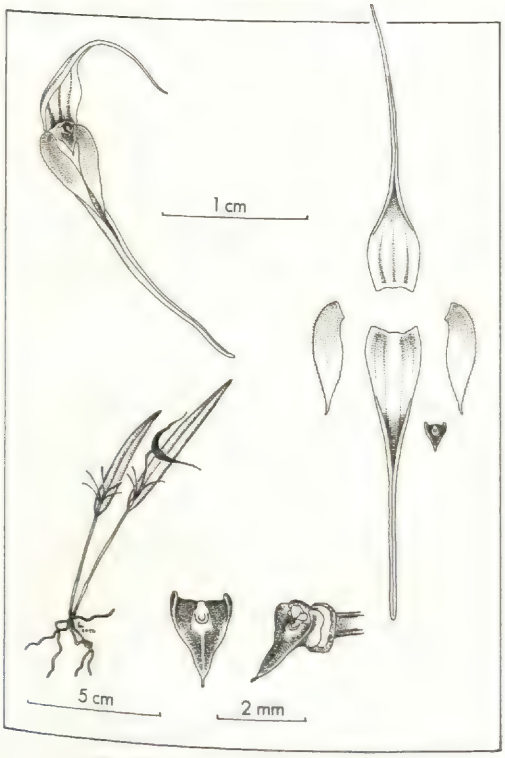


Fig. 27. Pleurothallis amphigya

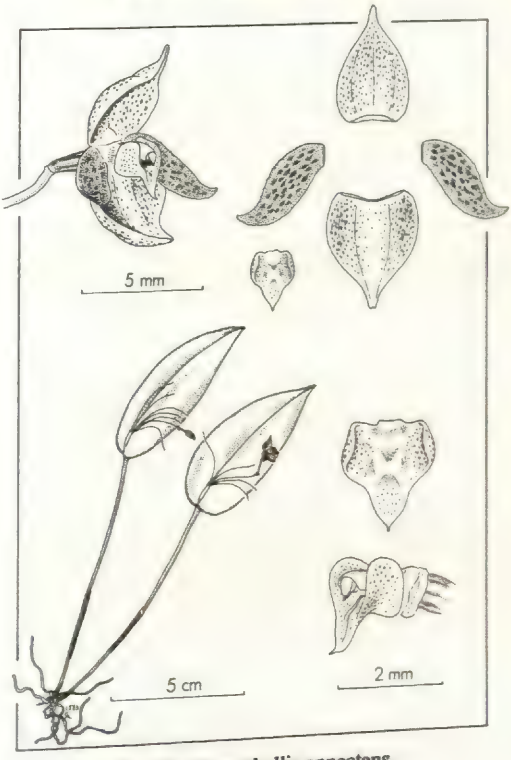


Fig. 28. Pleurothallis annectens

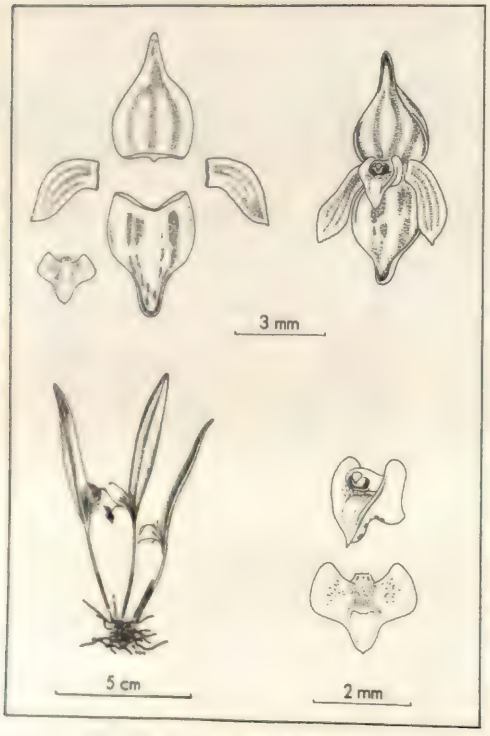


Fig. 29. Pleurothallis archicolonae

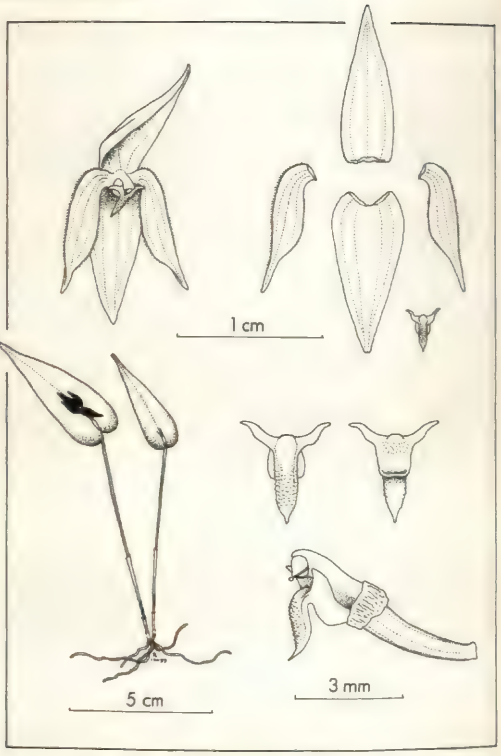


Fig. 30. Pleurothallis bucranon

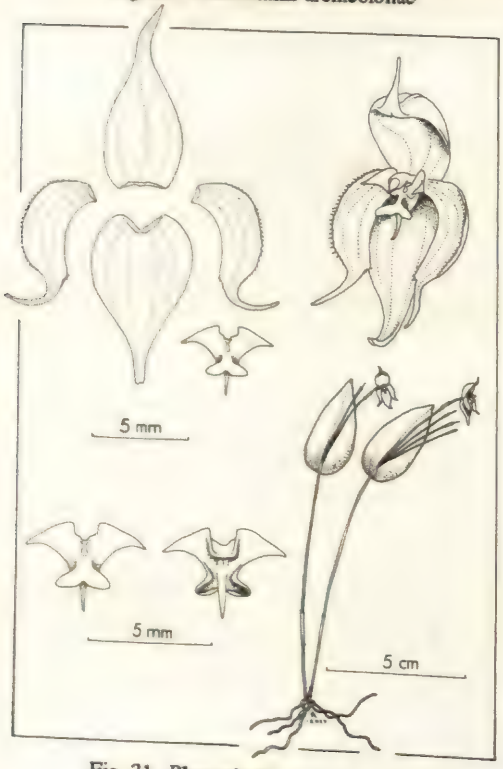


Fig. 31. Pleurothallis cauda-phocae

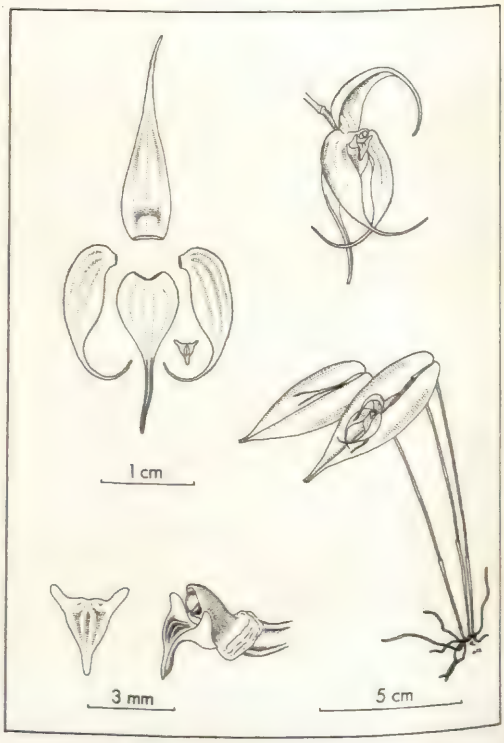


Fig. 32. Pleurothallis forceps-cancri

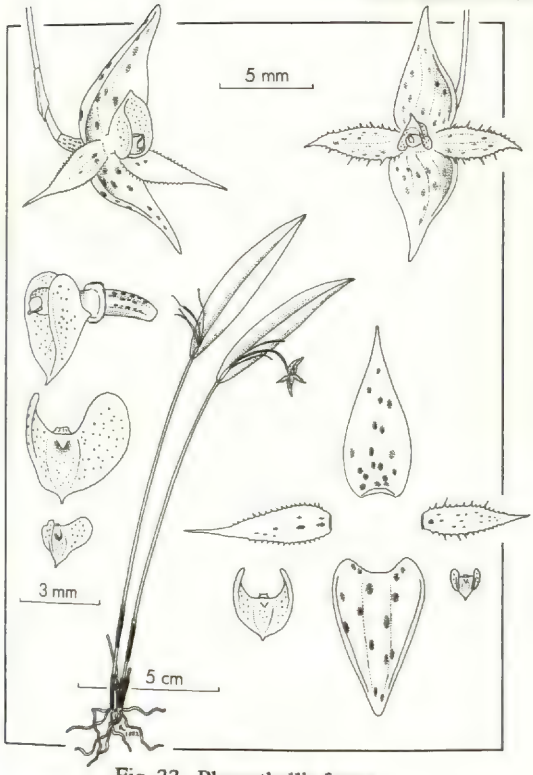


Fig. 33. Pleurothallis fugax

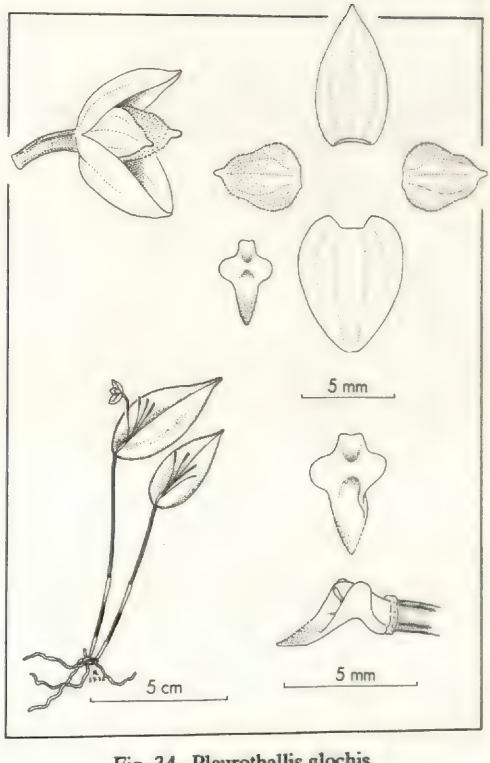


Fig. 34. Pleurothallis glochis

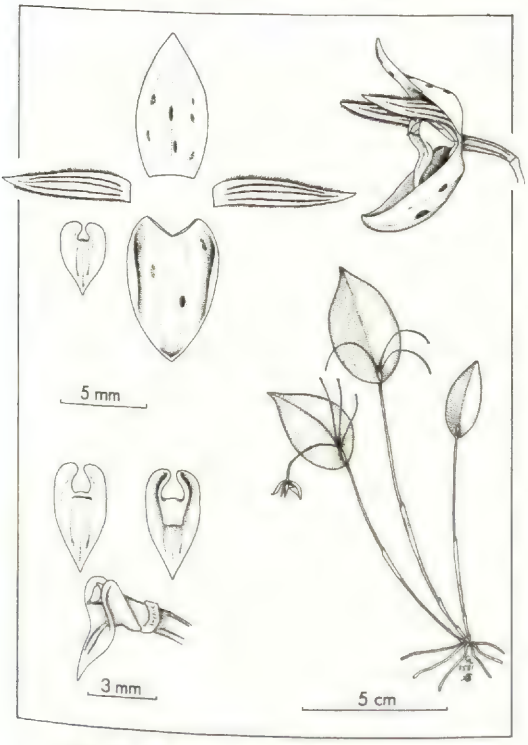


Fig. 35. Pleurothallis gracilipedunculata

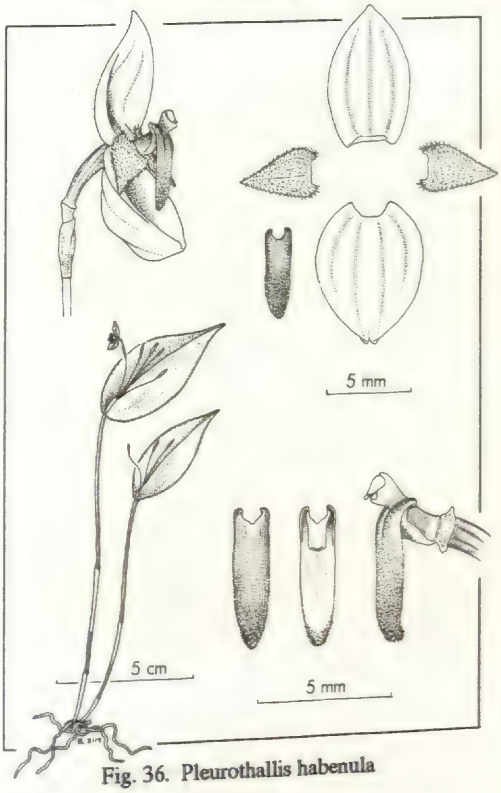


Fig. 36. Pleurothallis habenula

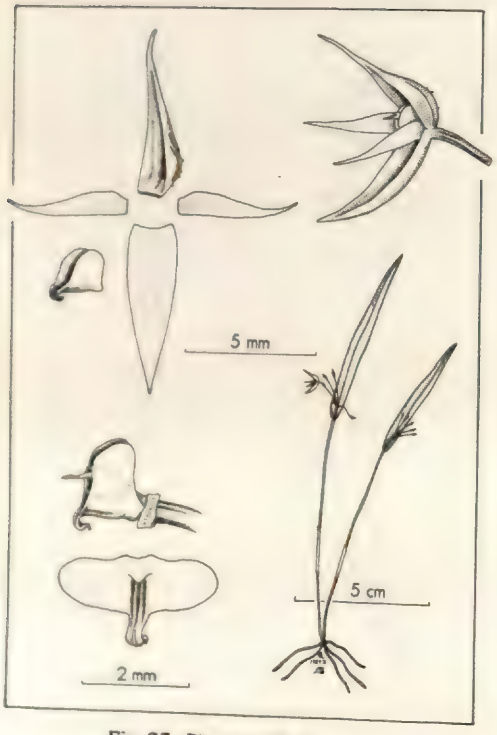


Fig. 37. Pleurothallis lobata

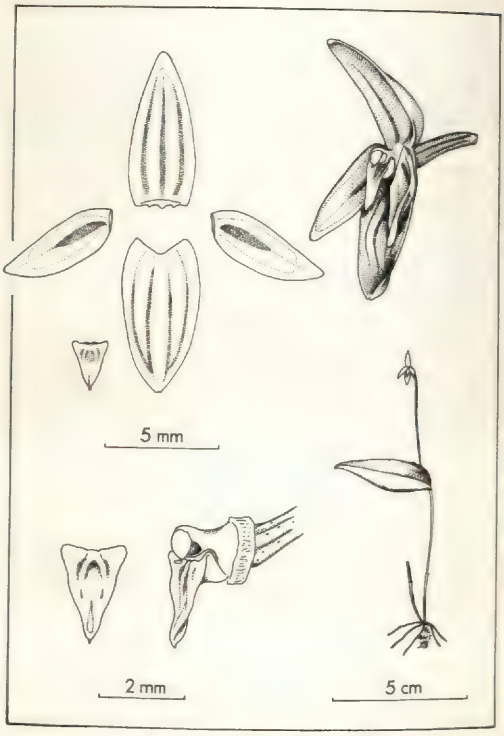


Fig. 38. Pleurothallis orecta

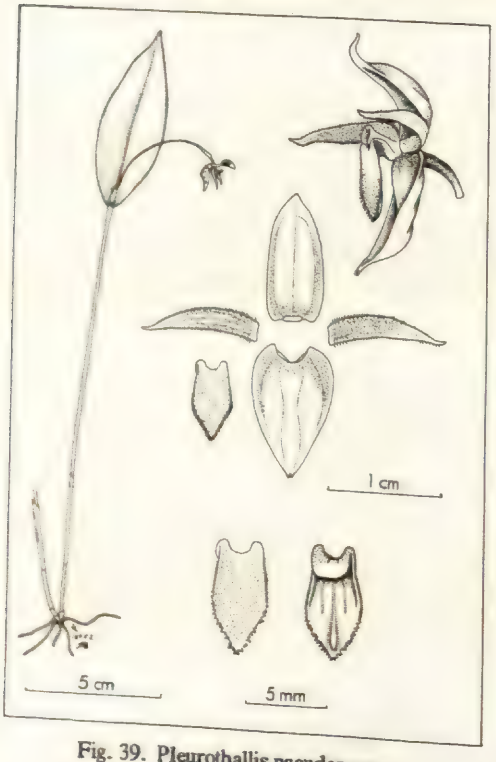


Fig. 39. Pleurothallis pseudopogon

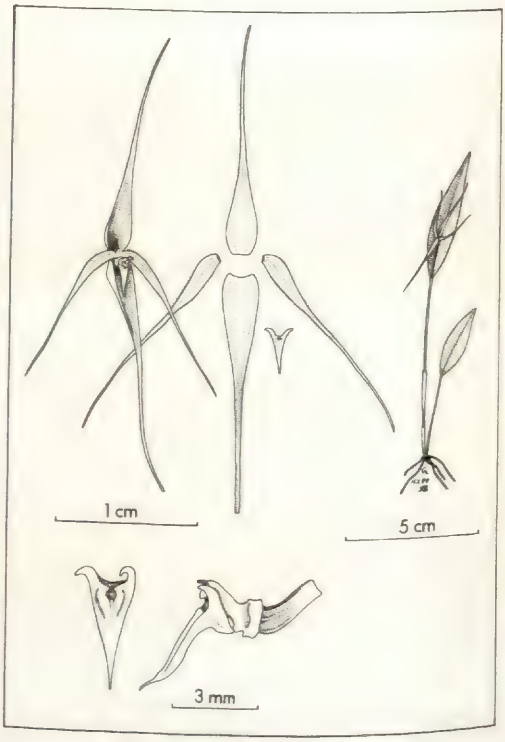


Fig. 40. Pleurothallis quadricaudata

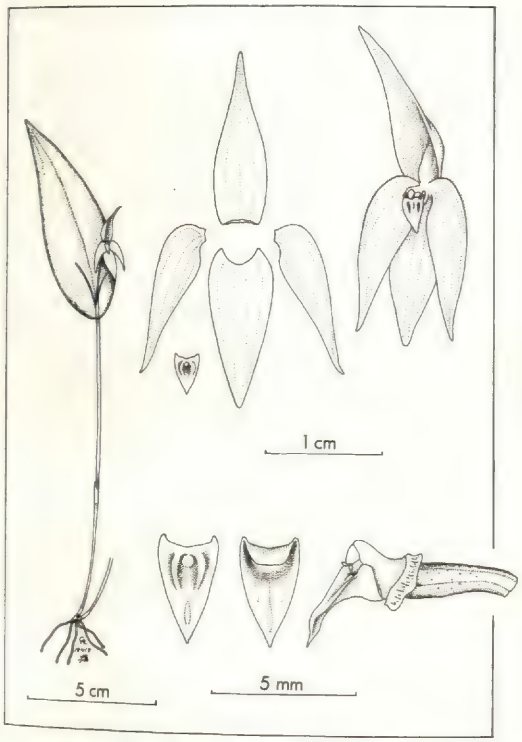


Fig. 41. Pleurothallis quaternaria

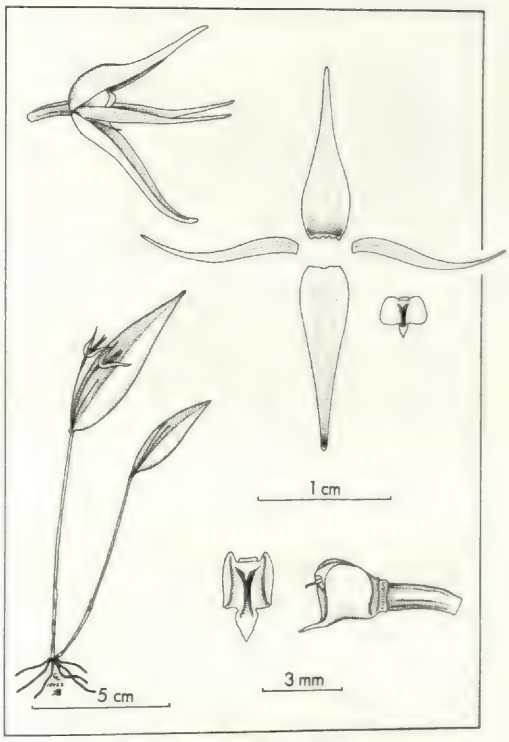


Fig. 42. Pleurothallis ramosii

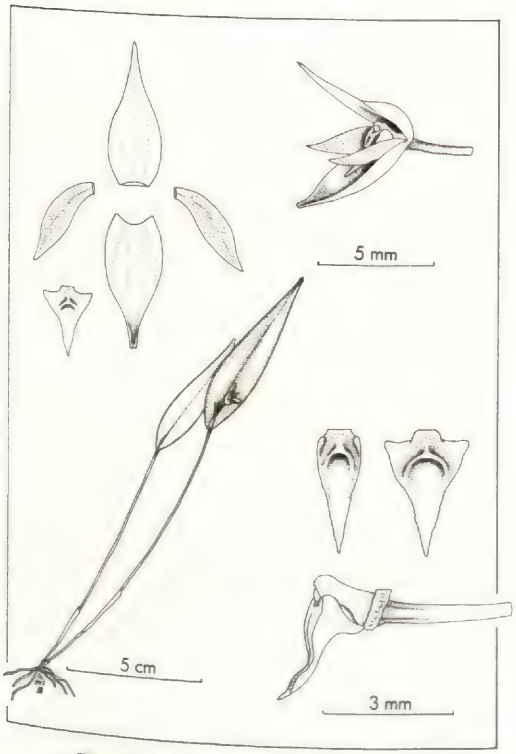


Fig. 43. Pleurothallis sagittilabia

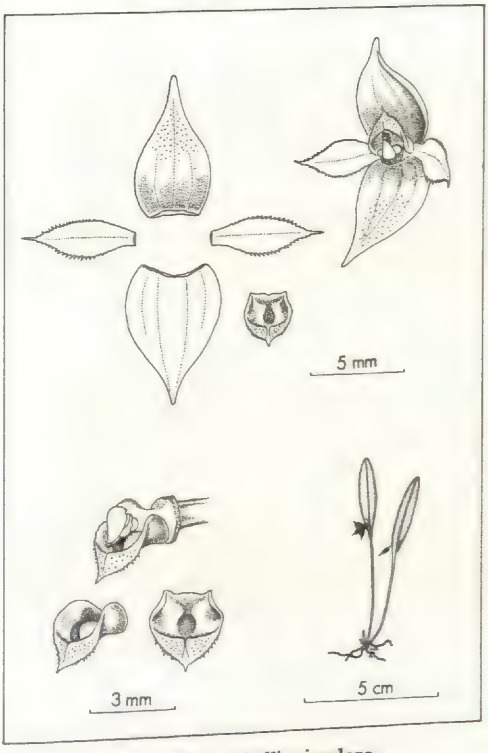


Fig. 44. Pleurothallis simulans

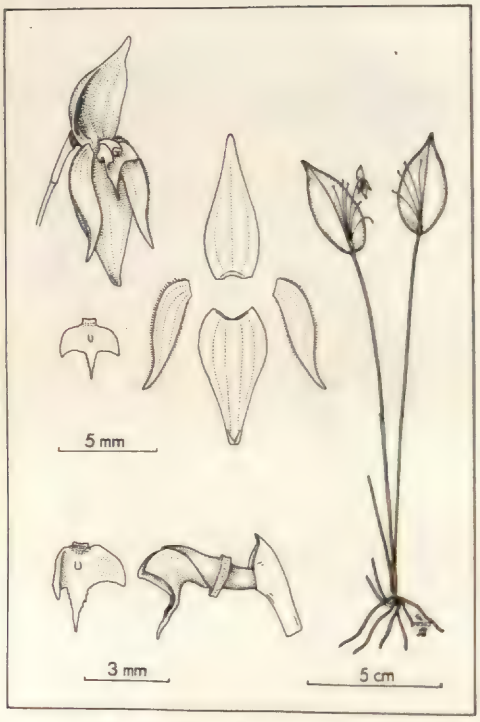


Fig. 45. Pleurothallis sobrina

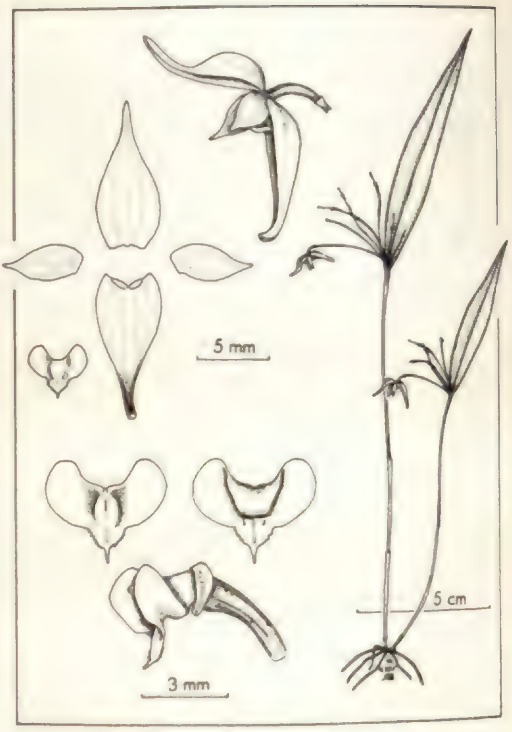


Fig. 46. Pleurothallis somnolenta

Fig. 47. Pleurothallis stevensonii

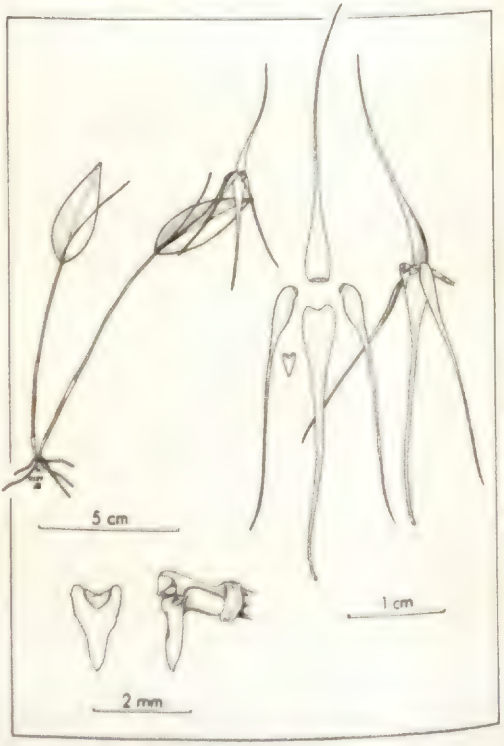


Fig. 48. Pleurothallis tetrachaeta

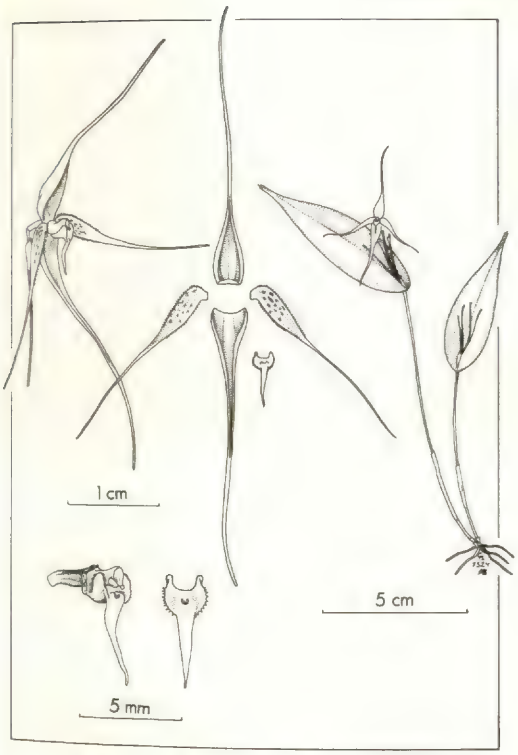


Fig. 49. Pleurothallis tipuloides

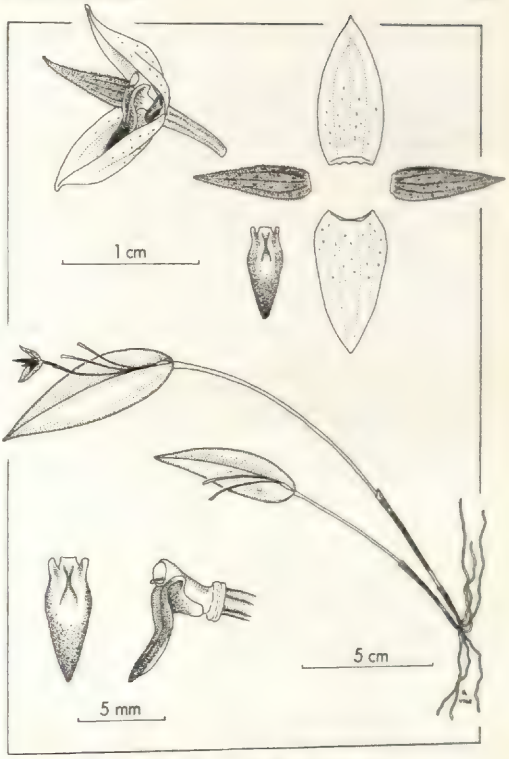


Fig. 50. Pleurothallis wigginsii

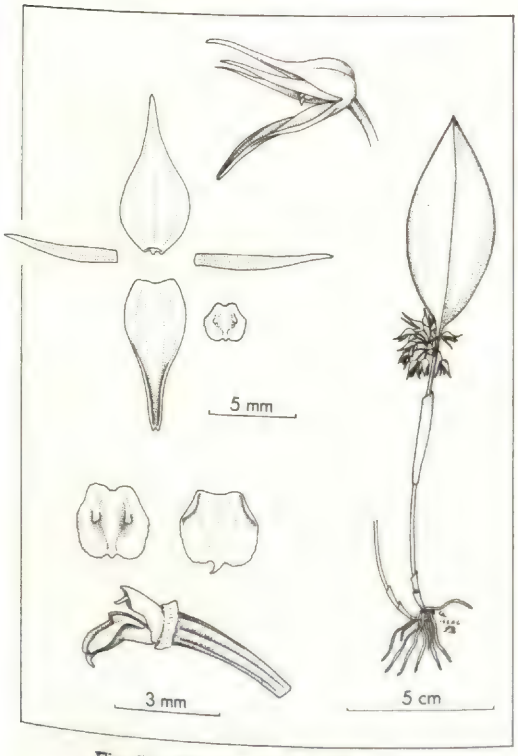


Fig. 51. Pleurothallis bicallosa

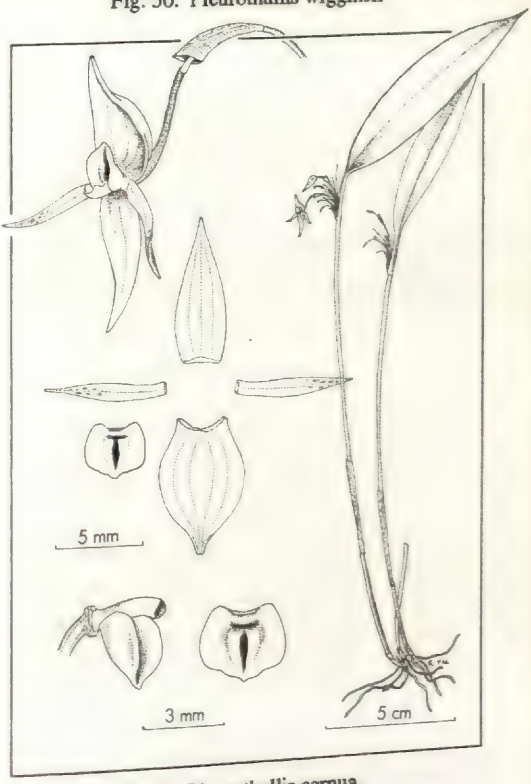


Fig. 52. Pleurothallis cernua

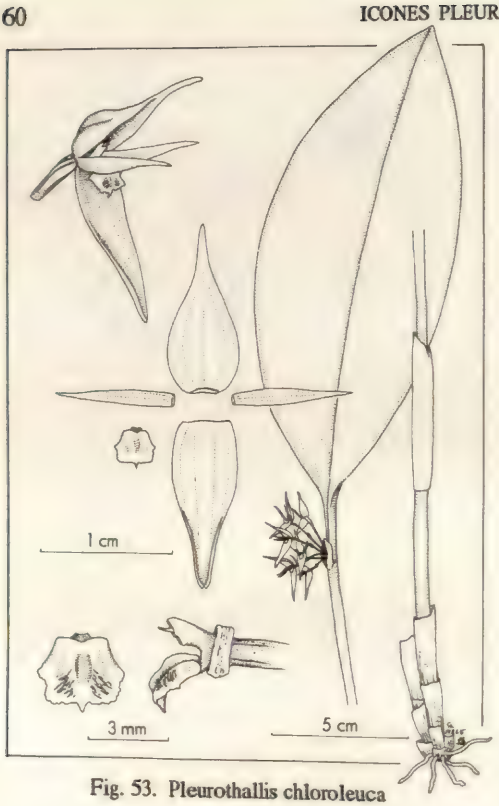


Fig. 53. Pleurothallis chloroleuca

Fig. 54. Pleurothallis circinata

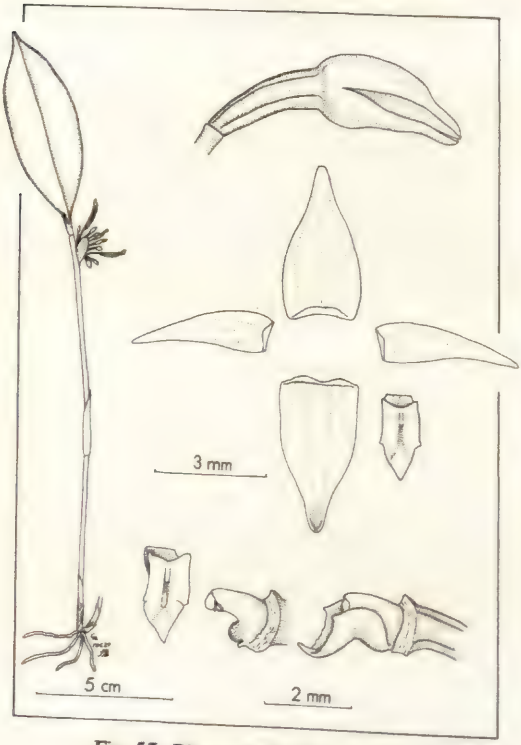


Fig. 55. Pleurothallis cleistogama

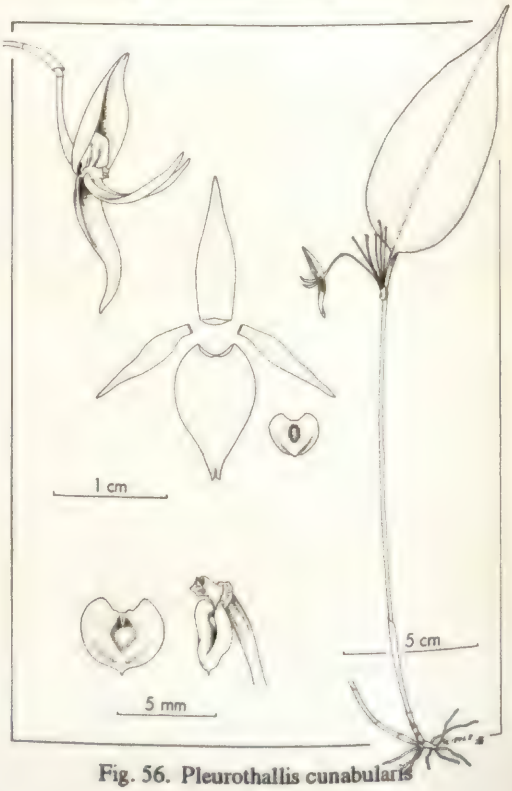


Fig. 56. Pleurothallis cunabularis

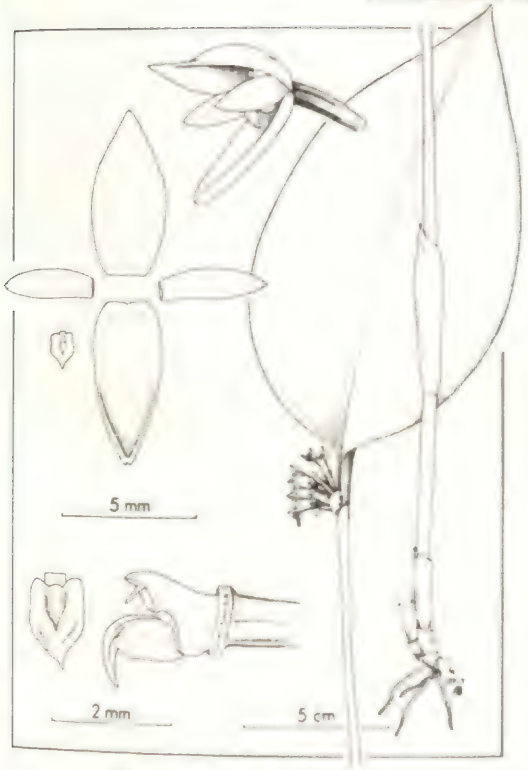


Fig. 57. Pleurothallis flaveola

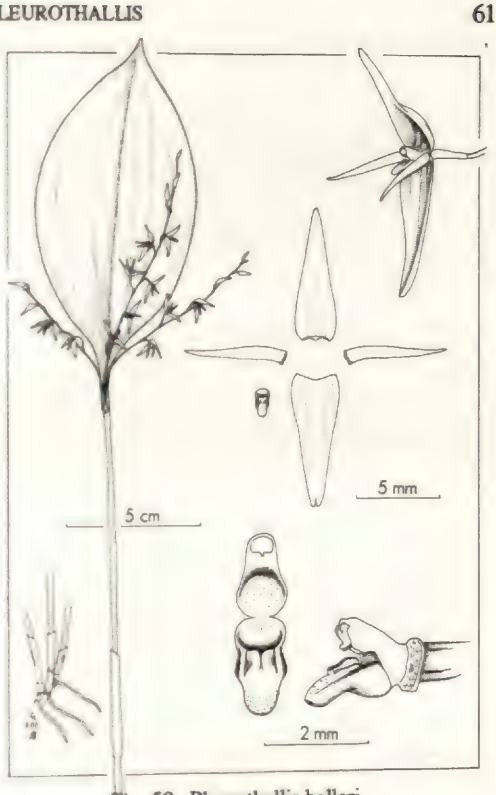


Fig. 58. Pleurothallis helleri

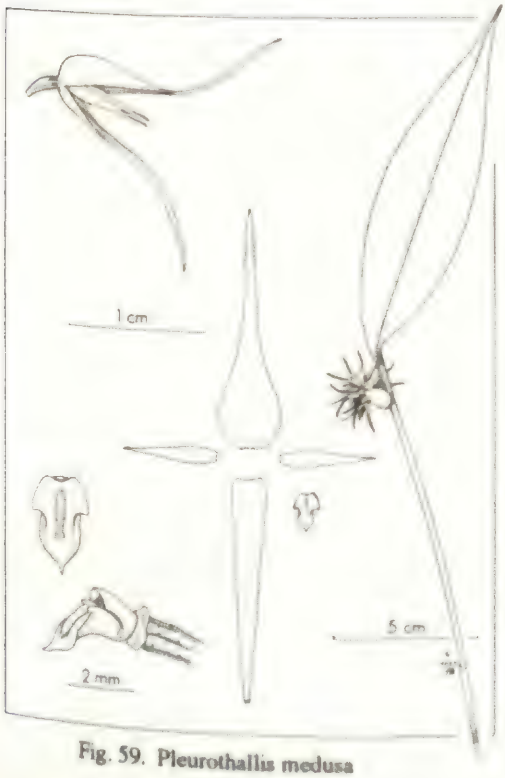


Fig. 59. Pleurothallis medusa

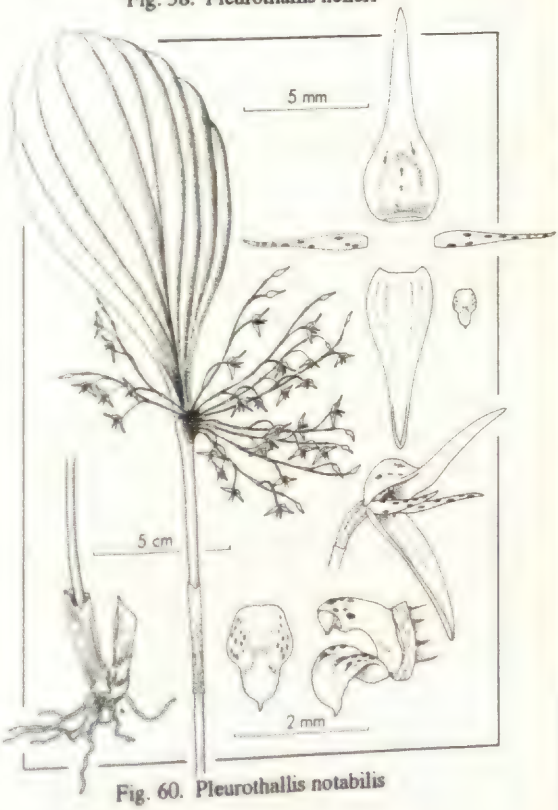


Fig. 60. Pleurothallis notabilis

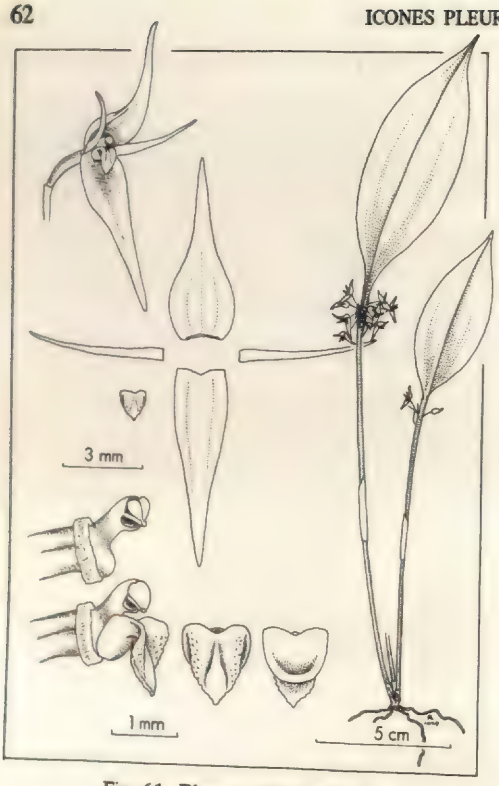
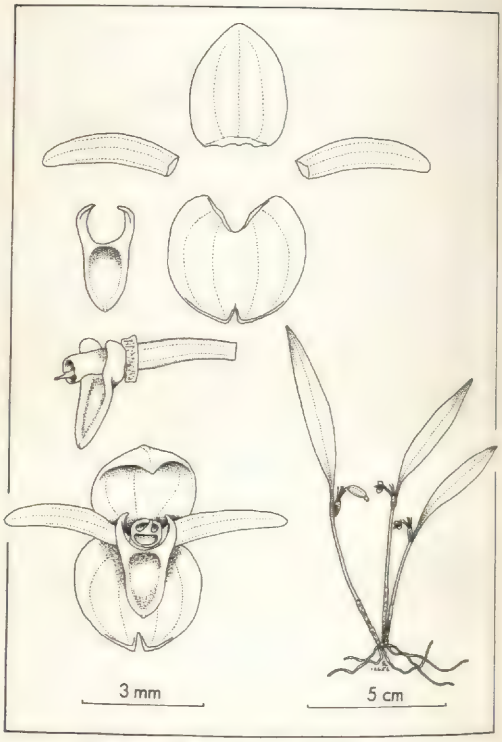


Fig. 61. Pleurothallis ruscifolia



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SYSTEMATICS OF *PLEUROTHALLIS* SUBGENUS *DRACONTIA* (ORCHIDACEAE)

ABSTRACT

Subgenus *Dracontia* Luer of *Pleurothallis* R.Br. is described with a key to the species. All 18 species are described and illustrated with a black and white drawing.

New taxa:
Pleurothallis sect. **Brobdingnagia** Luer, sect. nov.
Pleurothallis sect. **Cylindria** Luer, sect. nov.

This subgenus was proposed in *Systematics of Pleurothallis* (C. Luer, 1986). The first species of the subgenus to be described was published as *Epidendrum racemiflorum* from Jamaica by Swartz in 1788. The same species was described in 1836 as *Pleurothallis oblongifolia* by Lindley from a Cuban collection by Wright. In his *Folia Orchidaceae Pleurothallis* of 1859, Lindley transferred Swartz's *E. racemiflorum* to *Pleurothallis*, but the combination *P. racemiflora* was occupied by a different species described and illustrated with a colored lithograph by Loddiges in 1824.

The second species of the subgenus to be described is *P. pachyglossa* by Lindley in 1840 from an importation from Mexico by a Mr. Barker. Also from Mexico the latter species was published for Reichenbach posthumously by Kränzlin as *P. conanthera* in the third volume of *Xenia Orchidaceae* in 1900. As *P. formosa*, *P. pachyglossa* was described for the third time from a Türckheim collection near Cobán, Guatemala, by Schlechter. The next, or third species of the subgenus to be recognized, *P. tuerckheimii*, was published simultaneously with the last from a collection by the same collector from the same area.

All the species of the subgenus are distinguished by a caespitose habit and a ramicaul as long as or longer than the leaf. The inflorescence emerges from the ramicaul with a spathe at a distinct or indistinct annulus a short distance below the abscission layer. When the leaf is sessile, the annulus and abscission layer overlap. The spathe subtending the inflorescence is large, conspicuous and foliaceous in three species. The relatively large to very large flowers are borne successively or simultaneously in a loose raceme.

The sepals are tailless, but the dorsal sepal of some species is narrowly acute. The lateral sepals are connate at least to above the middle, but they are often more deeply connate into a synsepal that is shortly bifid at the apex. Except for the two huge species of section *Brobdingnagia* with petals unicarinate on the inner surface, the petals are broadly elliptical, rounded at the apex, conspicuously three-veined, concave, and more or less papillose on the convex outer surface.

The fleshy lip is distinctive in both section *Dracontia* and section *Brobdingnagia* with variations of a pair of erect, marginal lobes below the middle. The unispecific section *Cylindria* is characterized by a longitudinally involute, anterior lobe.

The column is relatively short, and often thickened toward the base. The foot is well-developed with a more or less free tip that is sometimes curved to resemble the free, incurved extension of the column-foot seen in *Masdevallia*. An incurved extension of the column-foot and longitudinally callous petals are criteria for the genus *Masdevallia*, but the habit of the plants easily distinguishes most. The anther is subapical or ventral with a pair of free, ovoid pollinia. The anther cap of *P. macrantha* is conspicuously elongated. The stigma of all the species is ventral.

The 18 species recognized here as constituting the subgenus are distributed from Mexico through Panama with one species in the Greater Antilles. All are epiphytic herbs that inhabit moist or seasonally dry forests at relatively low altitudes. Most are apparently easy to cultivate in ordinary greenhouse conditions.

SUBGENUS *DRACONTIA*

Pleurothallis subgenus **Dracontia** Luer, Monogr. Syst. Bot. 38: 26, 1986.
Type: *Pleurothallis tuerckheimii* Schltr, Repert. Spec. Nov. Regni Veg. 10: 292, 1912.
Ety.: From the Greek *dracon*, "a dragon," referring to the fierce-looking flowers.

Plants perennial, small to very large in size, epiphytic to terrestrial, caespitose with an abbreviated rhizome; roots relatively slender. Ramicauls erect, terete, as long as or longer than the leaf, non-pseudobulbous, unifoliate, variously enclosed by a tubular sheath near the middle and 1 or 2 others at the base. **Leaf** erect, coriaceous to thickly coriaceous, smooth, more or less elliptical, with the apex acute to subacute, shallowly notched with a mucro in the sinus, the base cuneate into a petiolate or sessile base. **Inflorescence** a successively or nearly simultaneously few- to many-flowered raceme, the flowers resupinate, variously colored, borne by a slender or stout peduncle that emerges laterally from the ramicaul with an annulus a short distance below the apex; floral bracts thin, acute, oblique, infundibular, or tubular; pedicels slender, shorter or longer than the floral bract; ovary smooth; **sepals** more or less fleshy, acute to obtuse, never caudate, often pubescent within, the dorsal sepal free from the lateral sepals except at the base, the lateral sepals connate to above the middle or nearly to the apex into a bifid lamina; **petals** more or less fleshy, oblong to broadly elliptical, obtuse, more or less concave, more or less verruculose on the external, convex surface, 3-veined, often conspicuously so; **lip** fleshy, 3-lobed, the anterior lobe thickened (with involute sides in one species), with the lateral lobes erect, below the middle, the base hinged on the end to the tip of the free portion of the column-foot; **column** terete to subconical, nonwinged, the apex variously dentate, the anther subapical with 2 obovoid pollinia, the stigma ventral, the base developed into a column-foot with the distal portion free.

The subgenus is divided into three sections based on the morphology of the petals and lip. The two huge species with a longitudinal callus down the center of elongated petals constitute section *Brobdingnagia*. The petals of the rest of the species are broad, obtuse, conspicuously three-veined, and concave with the external surface more or less verrucose. One species with longitudinally involute sides of the lip is segregated into section *Cylindria*, leaving all the rest, closely allied species in section *Dracontia*.

Subgen. **Dracontia** sect. **Dracontia**
Type: *Pleurothallis tuerckheimii* Schltr.

This section is characterized by the broad, obtuse, concave, usually conspicuously three-veined petals, and a fleshy, more or less verrucose, subcylindrical anterior lobe of the lip with erect, obtuse lobes below the middle.

Subgen. **Dracontia** sect. **Brobdingnagia** Luer, sect. nov.
Type: *Pleurothallis grandis* Rolfe.
Ety.: From Brobdingnag, the place where everything was gigantic, from Swift's *Gulliver's Travels*.

Petala elongata intus longitudinaliter carinata.

This section is characterized by the large size of the leaves, ramicauls and flowers, and elongated petals that are longitudinally carinate on the inner surface. It includes two Central American giants: *P. grandis* and *P. powellii*.

Subgen. **Dracontia** sect. **Cylindria** Luer, sect. nov.
Type: *Pleurothallis macrantha* L.O.Williams.
Ety.: From the Latin *cylindrus*, "a cylinder," referring to the tubular lip with involute sides.

Labelli lamina longitudinaliter involuta.

This unispecific section is characterized by the lip with longitudinally involute sides that create a tube.

BINOMIALS PUBLISHED IN *PLEUROTHALLIS* REFERABLE TO SUBGENUS *DRACONTIA*

Pleurothallis caligularis Luer = **P. carnosilabia**
Pleurothallis carnosilabia Heller & Hawkes ..... Fig. 1.
Pleurothallis cobanensis Schltr. ..... Fig. 2.
Pleurothallis conanthera Rchb. f. = **P. pachyglossa**
Pleurothallis conochila Luer ..... Fig. 3.
Pleurothallis dracontea Luer ..... Fig. 4.
Pleurothallis formosa Schltr. = **P. pachyglossa**
Pleurothallis fortunae Luer ..... Fig. 5.
Pleurothallis grandis Rolfe ..... Fig. 6.
Pleurothallis ingramii Luer ..... Fig. 7.
Pleurothallis liebmanniana Krzl. = **P. cobanensis**
Pleurothallis macrantha L.O.Williams ..... Fig. 8.
Pleurothallis megalochlamys Schltr. = **P. tuerckheimii**
Pleurothallis multirostris Rchb.f. = **P. oblongifolia**
Pleurothallis oblongifolia Lindl. ..... Fig. 9., Fig. 10.
Pleurothallis pachyglossa Lindl. ..... Fig. 11.
Pleurothallis papillifera Rolfe ..... Fig. 12.
Pleurothallis perennis Luer ..... Fig. 13.
Pleurothallis powellii Schltr. ..... Fig. 14.
Pleurothallis racemiflora (Sw.) Lindl., not Lodd. = **P. oblongifolia**
Pleurothallis ramonensis Schltr. ..... Fig. 15.
Pleurothallis thymochila Luer ..... Fig. 16.
Pleurothallis tintinnabula Luer ..... Fig. 17.
Pleurothallis tricostata Cogn. = **P. oblongifolia**
Pleurothallis tuerckheimii Schltr. ..... Fig. 18.

KEY TO THE SPECIES AND SECTIONS OF SUBGENUS *DRACONTIA*

1 Petals broad, rounded at the apex, concave, more or less verrucose externally, conspicuously 3-veined 3

Section *Brobdingnagia*

1' Petals narrow with a longitudinal carina on the inner surface, not conspicuously 3-veined 2

2 Sepals about 3 cm long; petals about 11 mm long, decurved in the natural position; lip much longer than tall ..... *P. grandis*
2' Sepals about 2 cm long; petals about 5 mm long, incurved; lip nearly as tall as long ..... *P. powellii*

Section *Cylindria*

3 Lip with the sides involute into a tube ..... *P. macrantha*

Section *Dracontia*

3' Lip not with sides involute into a tube 4

4 Leaf distinctly petiolate 5
4' Leaf sessile, narrowly cuneate, or indistinctly petiolate..... 8

5 Inflorescence subtended by an inconspicuous spathe; inflorescence successively flowered..... *P. pachyglossa*
5' Inflorescence subtended by a conspicuous spathe..... 6

6 Lobes of the lip basal, retrorse..... *P. tuerckheimii*
6' Sides of the lip broadly rounded below the middle..... 7

7 Lobes of the lip occupying about two-thirds the length of the lip..... *P. oblongifolia*
7' Lobes of the lip occupying basal third of the lip..... *P. cobanensis*

8 Inflorescence successively single-flowered..... *P. perennis*
8' Inflorescence with 2 or more simultaneous flowers..... 9

9 Mature ramicauls up to 5 cm long; lip nearly as large as the synsepal, broadly rounded at the apex..... *P. carnosilabia*
9' Mature ramicauls over 5 cm long; lip smaller than the synsepal, acute to obtuse at the apex 10

10 Leaves narrowly linear, less than 1.5 cm wide..... *P. ramonensis*
10' Leaves elliptical, more than 2 cm wide..... 11

11 Lip with broad lateral lobes occupying lower half of the lip..... *P. oblongifolia*
11' Lip with lobes occupying basal fourth of the lip..... 12

12 Lip with a concavity above a transverse callus..... 13
12' Lip without a concavity..... 14

13 Leaf subacute to obtuse; lateral sepals with margins involute..... *P. thymochila*
13' Leaf acute; lateral sepals without involute margins..... *P. tintinnabula*

14 Disc of the lip with a tall callus above the base..... 15
14' Disc of the lip without a tall callus above the base..... 16

15 Lip with a tall, longitudinal lamella above the base..... *P. ingramii*
15' Lip with a conical callus above the base..... *P. conochila*

16 Lip with the apex narrowly oblong, obtuse, papillose..... *P. dracontea*
16' Lip with the apex acute, smooth..... 17

17 Sepals more than 20 mm long with margins involute..... *P. fortunae*
17' Sepals less than 15 mm long without involute margins..... *P. papillifera*

Pleurothallis carnosilabia Heller & Hawkes, Phytologia 14: 9, 1966.

Ety.: From the Latin *carnisolabius*, "with a very fleshy lip," referring to the labellum.

Syn.: *Pleurothallis caligularis* Luer, Selbyana 3: 74, 1976.

Ety.: From the Latin *caligularis*, "like a little boot," referring to the shape of the lip.

Plant small for the section, epiphytic, caespitose, roots slender. Ramicauls slender, erect, 2-5 cm long, enclosed by a tubular sheath below the middle and 2 shorter sheaths at the base. **Leaf** erect, coriaceous, elliptical, acute, shortly petiolate, 2.5-5 cm long including the petiole 2-3 mm long, 1-1.2 cm wide, cuneate below into the petiolate base. **Inflorescence** a loose, successively 2-flowered raceme, ca. 2 cm long including the petiole ca. 1 cm long, borne laterally from near the apex of the ramicaul, with a slender spathe 2 mm long; floral bracts 2.5 mm long; pedicel 2.5 mm long; ovary 2.5 mm long; **sepals** red-purple, the dorsal sepal elliptical-obovate, acute, concave, 8-10 mm long, 4 mm wide, 3-veined, the lateral sepals connate to near the apex into an elliptical, obtuse, minutely bifid, concave, subcarinate lamina, 8 mm long, 6 mm wide; **petals** translucent with purple veins, broadly elliptical-obovate, obtuse, concave, verrucose externally, 4.5 mm long, 2.5 mm wide, 3-veined, with the veins lamellate within above the middle; **lip** snow white, marked with purple below the middle, fleshy, thick, obovate-3-lobed, 7 mm long, 3.25 mm wide, with rounded, erect basal lobes, the apical lobe elliptical, thick, rounded at the apex, the disc with a low, longitudinal callus, shallowly channeled to either side of the callus, with a rounded callus at the base, the base hinged to the tip of the column-foot; **column** white, suffused with purple-brown, stout, semiterete, 2.25 mm long, with the apical margin extending beyond the anther, the anther, rostellum and stigma ventral, the foot 1 mm long with the apex free.

NICARAGUA: **Chontales**: Cerro Pistacho, Babilonia district, epiphytic, alt. 2,150 ft., May 1962, *A.H. Heller 6537* (Holotype: AMES).
PANAMA: **Veraguas**: Guabal, Río Dos Bocas, northwest of Santa Fe, alt. 500 m, 15 Nov. 1974, *R.L. Dressler 4808* (holotype of *P. caligularis*: SEL); flowered in cult. 16 July 1976, C. Luer illustr. 1022.

This uncommon species is known from two isolated localities on either side of Costa Rica where, so far, it has not been seen. Vegetatively the smallest species of the subgenus, *P. carnosilabia* is distinguished by small elliptical, shortly petiolate leaves; a short, drooping, successively two-flowered inflorescence of comparatively large, fleshy flowers; verrucose petals lamellate within; and a large, white, bulbous, protruding lip nearly as large as the synsepal.

Pleurothallis cobanensis Schltr., Repert. Spec. Nov. Regni Veg. 11: 42, 1912.

Ety.: Named for the town of Cobán, Guatemala, near where this species was first discovered.

Syn.: *Pleurothallis liebmanniana* Krzl., Vidensk. Meddel. Dansk. Naturhist. Foren. Kjobenhavn 71: 170, 1920.

Ety.: Named in honor of Prof. F. Liebmann who collected the species in Mexico.

Plant medium to large, epiphytic, caespitose, roots slender. Ramicauls slender, erect, 5-15 cm long, enclosed by a loose, tubular sheath below the middle and 2 shorter sheaths at the base. **Leaf** erect, coriaceous, elliptical, obtuse, petiolate, 8-11 cm long including the petiole 1-1.5 cm long, 1.5-3 cm wide, cuneate below into the petiolate base. **Inflorescence** a subdense, secund, simultaneously several- to many-flowered raceme, 8-28 cm long including the petiole 5-10 cm long, borne laterally from near the apex of the ramicaul, with a conspicuous, foliaceous spathe 1.5-4 cm long; floral bracts 3-5 mm long; pedicel 3-6 mm long; ovary 1.5-2 mm long; **sepals** dark red-brown to purple, finely pubescent within above the middle, with the sides more or less involute above the middle, the dorsal sepal ovate, acute, concave, 7-13 mm long, 2-3 mm wide expanded, 3-veined, the lateral sepals connate to near the apex into an ovate, bifid, bicarinate, concave lamina, 7-13 mm long, 3-5 mm wide together expanded, the carinae extending to the acute apices; **petals** translucent with purple veins, broadly elliptical-obovate, rounded at the apex, concave, verrucose externally, 3-4.5 mm long, 1.8-2.25 mm wide, 3-veined; **lip** dark purple or dark red-brown, fleshy, ovate-3-lobed, 3.5-5 mm long, 1.5-2 mm wide, with broadly rounded, supererect marginal lobes below the middle, the apical lobe ovate, obtuse, the disc minutely verrucose, superficially channeled, the base hinged to the tip of the column-foot; **column** purple, stout, semiterete-subconical, 3 mm long, with the apical margin extending beyond the anther, the anther, rostellum and stigma ventral, the foot 1 mm long with the apex free.

GUATEMALA: **Alta Verapaz**: near Cobán, alt. 4,300 ft., Oct. 1885, *H. v. Türckheim 798* (Holotype presumably destroyed at B; lectotype here designated: AMES 23618, illustr. of type); near Cobán, alt. 4,300 ft., Nov. 1877, *H. v. Türckheim s.n.* (W); Cobán alt. 4,500 ft., Dec. 1887, *H. v. Türckheim 798*

(AMES); same area, collected by O. Mittelstaedt, flowered in cultivation at Cobán, 27 Nov. 1990, *C. Luer 14845* (MO).
MEXICO: **Veracruz**: between Lobani and Petlapa, June 1842, *F. Liebmann 7309* (orchid no. 339-340) (holotype of *P. liebmanniana*: C); Mirador, *F. Liebmann s.n.* (W). **Chiapas**: east of Comitan, alt. ca. 1400 m, 2 Sept. 1937, *E. Monzón 6993* (AMES). **Oaxaca**: without collection data, flowered in cultivation by P. Jesup, 17 Oct. 1975, *C. Luer 55* (SEL).
BELIZE: Cayo District: below summit of Baldy Beacon, Mountain Pine Ridge, alt. 1000 m, 22 Apr. 1979, *B.R. Adams 292* (K).
NICARAGUA: **Zelaya**: Cerro Musún, alt. 1020 m, *A.H. Heller 6322* (SEL).
COSTA RICA: **Alajuela**: San Ramón towards Potrerídero, ca. 1867, *A. Endres 30, 67* (illustr. at W); La Palma de San Ramón, 5 July, 1927, *A.M. Brenes (49)1651* (AMES). **Cartago**: Candelaria, ca. 1867, *A. Endres 82* (illustr. at W).

This Central American species is closely allied to *P. oblongifolia* of the Greater Antilles, and is inconclusively distinguished by minor details of the lip. The lateral lobes of *P. cobanensis* occupy the basal half of the lip, while the sides of the lip of *P. oblongifolia* occupy the basal two-thirds.

Pleurothallis cobanensis is characterized by obtuse, petiolate leaves; a conspicuous spathe; and a simultaneously many-flowered raceme of purple flowers. The flowers appear similar to those of sympatric *P. tuerckheimii*, but they are only about half the size. The primary difference lies in the broadly rounded lateral lobes of the lip that occupy the basal half of the lip. The lateral lobes of the lip of *P. tuerckheimii* are smaller in proportion, rounded and basal.

Pleurothallis conochila Luer, Lindleyana 11: 75, 1996.

Ety.: From the Greek *konocheilos*, "with a conical lip," referring to the shape of the lip.

Plant medium in size, epiphytic, caespitose, roots slender. Ramicauls slender, erect, 3-5 cm long, enclosed by a thin, tubular sheath below the middle and 2 shorter sheaths at the base. **Leaf** erect, coriaceous, elliptical, subacute to obtuse, subsessile, 5-8 cm long, 1.5-2 cm wide, narrowly cuneate below into the base. **Inflorescence** a distantly, several-flowered, subflexuous raceme, up to 22 cm long including the slender peduncle 11-12 cm long, 2-3 flowers open simultaneously, borne from near the apex of the ramicaul, barely 1 mm below the abscission layer, with a slender spathe 6-7 mm long; floral bracts 3-4 mm long; pedicel 10-11 mm long; ovary 4 mm long; **sepals** dark red-purple, glabrous, the dorsal sepal elliptical-ovate, acute, concave, 8 mm long, 3.75 mm wide, 3-veined, the lateral sepals connate to near the apex into an elliptical, bifid, bicarinate, concave lamina, 9 mm long, 5.5 mm wide expanded, the carinae tall and irregular at the acute apices; **petals** light purple, broadly elliptical-obovate, rounded at the apex, concave, purple-papillose externally, 4 mm long, 2.3 mm wide, 3-veined, with the veins prominent on the inner surface; **lip** dark purple, fleshy, narrowly ovoid, 3-lobed, 4.5 mm long, 1 mm wide, with the margins thin and erect in the basal fourth forming broadly rounded lobes above the base, the apical lobe thick, narrowly conical, acute, transversely rugose, convex, the callus conical above the base, the base hinged to the tip of the column-foot; **column** red, stout, semiterete, 2 mm long, with the anther, rostellum and stigma ventral, the foot 1 mm long with the apex free.

COSTA RICA: **Limón**: Canton de Talamanca, Fila de exploratión minera entre Río Sukut y Río Carbrí, Muragubishi, epiphytic, alt. 700 m, *F. Solís, G. Herrera & A. Chacón 24* (Holotype: MO; Isotype: CR), C. Luer illustr. 16517. **Puntarenas**: Monteverde Reserve, Cerro Ojo de Agua, Cedral, epiphytic, alt. 1600 m, 6 May 1988, *E. Bello 181* (CR); Monteverde, above Quebrada Cuecha, alt. 1540-1600 m, 4 June 1976, *V. J. Dryer 128* (CR).

In habit this species is similar to other members of the subgenus characterized by an elliptical, obtuse, subpetiolate leaf, and an inconspicuous spathe. The raceme of *P. conochila* is elongated, loosely flowered and long-pedicellate. The purple flowers are medium-sized with proportionately larger petals, and a narrowly conical lip with the disc transversely rugose, convex and conical at the base. The basal lobes are thin, rounded and erect.

Pleurothallis dracontea Luer, Phytologia 49: 204, 1981.

Ety.: From the Latin *draconteus*, "dragon-like," in allusion to the hairy, gaping mouth with a warty, upturned tongue.

Plant medium in size, epiphytic, caespitose, roots slender. Ramicauls slender, erect, 5-13 cm long, enclosed by a thin, tubular sheath below the middle and 2 shorter sheaths at the base. **Leaf** erect, coriaceous, elliptical, acute to subacute, sessile, 5-9.5 cm long, 1.5-2.5 cm wide, cuneate below into the base. **Inflorescence** an erect, distantly, few- to many-flowered raceme, 2-3 flowers open simultaneously, up to 28 cm long including the slender peduncle 6-8 cm long, borne laterally from near the apex of the ramicaul at the base of the leaf, with a slender spathe 10-11 mm long; floral bracts 4-5 mm long; pedicel 5-8 mm long; ovary 5-6 mm long; **sepals** dark purple, villous with white hairs within above the middle, the dorsal sepal ovate, acute, acuminate, concave, 21 mm long, 5 mm wide, 3-veined, the lateral sepals connate to near the apex into an ovate, bifid, bicarinate, concave lamina 22 mm long, 8 mm wide expanded, the toothed carinae protruding at the acute apices; **petals** white, marked with purple, obovate-oblong, rounded at the apex, concave, long-tuberculate externally, 5.5 mm long, 3 mm wide, 3-veined, at least 2 of the veins tall-lamellate on the inner surface in the distal portion; **lip** white, marked with purple, fleshy, narrowly ovoid, 3-lobed, 6 mm long, 1.5 mm wide, the margins thin and erect above the base into low, rounded lobes, the apical lobe subcylindrical, papillose, the apex narrowly obtuse, more or less incurved, the disc shallowly channeled, the undersurface acutely angled above the base, the base hinged to the tip of the column-foot; **column** dark purple, stout, semiterete, 2 mm long, with a dentate margin extending beyond the anther, the anther, rostellum and stigma ventral, the foot white, 2 mm long with the apex free.

COSTA RICA: **Heredia**: epiphytic in cloud forest east of the pass north of Castillo, alt. 2000 m, 21 June 1981, *C. Luer & A. Luer 6358* (Holotype: SEL; Isotype: CR); Parqué Nacional Braulio Carrillo, Canton de Heredia, Park Refugio, alt. 2100 m, 4 Nov. 1990, *S. Ingram & K. Ferrell 666* (CR, SEL).

This species is distinguished from the other closely related species by the acute, sessile leaves; a slender, inconspicuous spathe; a long, loose raceme of successive flowers with sepals long-villous within; long-papillose petals; and a narrow, papillose-verrucose lip incurved at the apex, and with low, basal lobes.

Pleurothallis fortunae Luer & Dressler, Lindleyana 6: 97, 1991.

Ety.: Named for the Fortuna dam site where the species was discovered.

Plant medium in size, epiphytic, caespitose, roots slender. Ramicauls slender, erect, 4-7 cm long, enclosed by a tubular sheath below the middle and 2 shorter sheaths at the base. **Leaf** erect, coriaceous, elliptical, subacute to obtuse, sessile, 3.5-4.5 cm long, 1.5-2 cm wide, cuneate below into the base. **Inflorescence** an erect, loose, flexuous, distichous, more or less simultaneously few-flowered raceme, 8-10 cm long including the petiole ca. 4 cm long, borne from the base of the leaf with a narrow spathe 5 mm long; floral bracts 4-5 mm long; pedicel 6-8 mm long; ovary 4-5 mm long; **sepals** purple-brown, ciliate, with the sides more or less involute, the dorsal sepal minutely denticulate along the midvein externally, narrowly ovate, acute, 22 mm long, 3.5 mm wide expanded, 3-veined, the lateral sepals connate to near the apex into a tubular synsepal, bicarinate with acute apices, 21 mm long, 5 mm wide expanded; **petals** yellow with purple veins, broadly elliptical-obovate, rounded at the apex, concave, verrucose externally, 4 mm long, 2.5 mm wide, 3-veined; **lip** yellow, with red-purple suffusion, fleshy, thick, semiterete, ovoid, 3-lobed, lightly deflexed above the base, 5 mm long, 1.5 mm wide, the lateral lobes erect, broadly rounded, above the base, the apical lobe semiterete, acute, the disc microscopically cellular-glandular, the base hinged to the tip of the column-foot; **column** red, stout, semiterete, 2 mm long, with the apical margin extending beyond the anther, the anther, rostellum and stigma ventral, the foot 1 mm long with the apex free.

PANAMA: **Chiriquí**: epiphytic in cloud forest around the Fortuna dam site, alt. 1000 m, collected Aug. 1976, flowered in cult. 13 Nov. 1946, *R. L. Dressler s.n.* (Holotype: SEL), C. Luer ill. 1610.

Pleurothallis fortunae is distinguished from other species of subgenus *Dracontia* by the relatively small habit; obtuse, elliptical leaves; an inconspicuous spathe; a relatively short, loose, flexuous, distichous raceme of flowers with long, narrow sepals with involute margins.

Pleurothallis grandis Rolfe, Bull. Misc. Inform. 234, 1918.

Ety.: From the Latin *grandis*, "large," referring the size of the species.

Plant large to very large, epiphytic to terrestrial in humus, caespitose, roots slender. Ramicauls stout, erect, 30-94 cm long, enclosed by a loose, tubular sheath below the middle and 2 shorter sheaths at the base. **Leaf** erect, coriaceous, elliptical, acute to subacute, sessile, 17-34 cm long, 9-17 cm wide, cuneate below to the base. **Inflorescence** a subdense, secund, simultaneously many-flowered raceme, 40-58 cm long including the petiole ca. 10 cm long, borne laterally from the apex of the ramicaul at the base of the leaf, with a spathe 2-3 cm long; floral bracts 6-10 mm long; pedicel 3 mm long; ovary cellular-glandular, 5-6 mm long; **sepals** dark purple to dull green, subcarinate, the dorsal sepal narrowly ovate, acute, concave, 30 mm long, 4 mm wide, 5-veined, the lateral sepals connate to near the apex into an oblong-ovate lamina 33 mm long, 10 mm wide, 12-veined, the apex bifid with acute apices, concave below the middle; **petals** fleshy, narrowly ovate, 11 mm long, 2.5 mm wide, 3-veined, longitudinally carinate along the midvein on the inner surface, the apex narrowly obtuse, conspicuously decurved above the middle; **lip** purple to green, fleshy, oblong-ovate, obscurely 3-lobed, 11 mm long, 2-3.5 mm wide, with the margins erect below the middle, increasing in height to broadly rounded, concave, retrorse, basal lobes, the anterior lobe oblong, obtuse, minutely verrucose, the disc concave, superficially channeled along a low, longitudinal callus extending forward from the base, the base hinged to the tip of the column-foot; **column** stout, semiterete, 4 mm long, with the apical margin extending beyond the anther, the anther, rostellum and stigma ventral, the foot 2 mm long with the apex free.

COSTA RICA: **Cartago**: Cachi, without specific locality, cultivated at Kew, Sept. 1917, *C. H. Lankester s.n.* (Holotype: K); Cachi, alt. 4,000 ft., 13 Dec. 1922, *C.H. Lankester 370* (AMES); same locality, Jan. 1924, *C.H. Lankester 574* (AMES); Cerro de Carizia, alt. 1800 m, Sept. 1900, *H. Pittier 14051* (AMES, US); El Muñeco, Río Navarro, alt. 1400-1500 m, 6 Mar. 1926, *P.C. Standley & R. Torres 51737* (AMES). **Heredia**: Vara Blanca between Volcán Poás and Barba, alt. 1400 m, Jan. 1938, *A. Skutch 3461* (AMES, K, S). **Guanacaste**: Abangares, upper San Gerado valley north of Monteverde, Atlantic slope, alt. 1500 m, 12 Oct. 1989, *W. Haber & W. Zuchowski 9542* (CR, MO); Monteverde, *J. Atwood s.n.* (SEL), C. Luer illustr. 16515.

This species, the largest of the subgenus, has been described by Lankester as being comparatively common southeast of Cartago, growing epiphytically in stunted forests as well as forming "fine masses" when growing terrestrially. Plants are commonly over a meter in height exclusive of the long raceme. The leaves are dinner-plate-sized, but the spathe at the base is small.

The large flowers are produced simultaneously in a long, loose, secund raceme. The dorsal sepal is long and narrow, and the broader synsepal is bifid. The petals are narrow and curved downward with a longitudinal carina on the inner surface. The lip is oblong with erect, concave, lateral lobes above the base.

Pleurothallis ingramii Luer, Lindleyana 11: 81, 1996.

Ety.: Named in honor of Stephen Ingram who, with Karen Farrell, discovered this species.

Plant medium in size, epiphytic, caespitose, roots slender. Ramicauls slender, erect, 5-13 cm long, enclosed by a thin, closely fitting tubular sheath below the middle and 2 shorter sheaths at the base. **Leaf** erect, coriaceous, elliptical, acute, subsessile, 7-12 cm long, 2-2.3 cm wide, narrowly cuneate below into the base. **Inflorescence** a distantly 3- to 4-flowered raceme, up to 12 cm long including the slender peduncle ca. 8 cm long, borne laterally from near the apex of the ramicaul, barely 1 mm below the abscission layer, with a slender spathe 7-8 mm long; floral bracts 4-5 mm long; pedicel 5-6 mm long; ovary 3 mm long; **sepals** dark purple with involute margins, pubescent within above the middle, the dorsal sepal ovate, acute, acuminate, concave, 14 mm long, 4 mm wide, 3-veined, the lateral sepals connate to near the apex into an oblong-ovate, bifid, bicarinate, concave lamina 15 mm long, 5 mm wide expanded; **petals** dark purple, elliptical-oblong, rounded at the apex, concave, barely subverrucose externally, 6 mm long, 4 mm wide, 3-veined, with the veins tall-lamellate on the inner surface in the distal half; **lip** dark purple, fleshy, ovoid, 3-lobed, 7 mm long, 2 mm wide, the margins thin and erect below the middle forming rounded, basal lobes above the base, the apical lobe elliptical, obtuse, lightly verrucose, convex below the middle, the disc with a tall, longitudinal callus extending to the base, the undersurface arcuate with a lamella below the middle, hinged to the tip of the column-foot; **column** stout, semiterete, 3 mm long, with a dentate margin extending beyond the anther, the anther, rostellum and stigma ventral, the foot 1 mm long with the apex free.

COSTA RICA: **Limón**: Parqué Nacional Braulio Carrillo, Canton de Pococí, Carrillo Station, Quebrada Gonzalez, epiphytic, alt. 650 m, 15 Nov. 1990, *S. Ingram & K. Ferrell 697* (Holotype: CR; Isotypes: MO, SEL), C. Luer illustr. 16506. **San José**: Parqué Nacional Braulio Carrillo, Canton de Vásquez de Coronado, above Zurqui Station, alt. 1680 m, 29 Oct. 1990, *S. Ingram & K. Ferrell 638* (CR, SEL).

This species is most similar to *P. dracontea*, but *P. ingramii* is distinguished by the three tall-lamellate veins on the concave, inner surface of the petals, and the tall, longitudinal carina on the disc of the lip above the base. The apex of the lip is broad and obtuse, not narrowly terete, verrucose and incurved as in *P. dracontea*.

Pleurothallis macrantha L.O.Williams, Ann. Missouri Bot. Gard. 28: 417, 1947.

Ety.: From the Greek *makranthos*, "large-flowered," referring to the size of the flower.

Plant large to medium in size, epiphytic, caespitose, roots slender. Ramicauls stout, erect, 6-9 cm long, enclosed by a large, loose, tubular sheath from below the middle and 2 shorter sheaths at the base. **Leaf** erect, coriaceous, elliptical, obtuse, sessile, 5-8 cm long, 2-4 wide, cuneate below into the base. **Inflorescence** a lightly flexuous, distantly few-flowered raceme, up to 15 cm long including the petiole 6-7 cm long, borne from the apex of the ramicaul at the base of the leaf, with a slender spathe 8-10 mm long; floral bract thin, 6-7 mm long; pedicel 6-8 mm long, acutely deflexed at the apex; ovary sigmoid, 5-6 mm long; **sepals** pale yellow-green, spotted and suffused with purple, glabrous, the dorsal sepal obovate, obtuse, concave, 19-23 mm long, 8-9 mm wide expanded, 3-veined, the lateral sepals connate to near the apex into an obovate, minutely bifid, bicarinate, concave lamina, 18-23 mm long, 8-9 mm wide together expanded, the apices acute; **petals** fleshy, white, suffused with purple along the veins, the veins elevated both internally and externally, cuneate-obovate, truncate, 10 mm long, 4.5 mm wide, 3-veined; **lip** orange, suffused with purple, 3-lobed, 10 mm long, 2.5 mm wide, with the margins above the base thin and erect forming rounded lobes, the apical lobe fleshy, oblong with the sides involute into a cylinder, with the apex truncate, the disc with a central keel above the base, the base hinged to the tip of the column-foot; **column** purple, stout, semiterete-subconical, 1.5 mm long, with the anther elongate, 1.25 mm long, the stigma ventral, the foot 1.5 mm long.

PANAMA: **Chiriquí**: vicinity of Bajo Chorro, alt. 1900 m, 20 July 1940, *R.E. Woodson & R.W. Schery 666* (Holotype: AMES; Isotype: US); Guadalupe, collected by H. Butcher, June 1976, flowered in cultivation, *C. Luer 1285* (SEL).
COSTA RICA: **Limón**: Cordillera de Talamanca, Cerros Tararia, "Tres Picos" alt. 2400-2600 m, 10 Sept. 1984, *G. Davidse, G. Herrera & M. Grayum 28820* (MO).

This species is unique in the subgenus with the sides of the long midlobe of the lip involute to form a tube. This cylinder-like lip was not appreciated in the original description drawn from a rehydrated flower. A few, large, purple-mottled flowers are borne in a loose, erect raceme. The large, 3-veined petals are truncate.

Pleurothallis oblongifolia Lindl., Comp. Bot. Mag. 2: 355, 1836.

Ety.: From the Latin *oblongifolius*, "with oblong leaves," referring to the foliage.

Syn.: *Epidendrum racemiflorum* Sw., Prodr. 125, 1788.
Ety.: From the Latin *racemiflorus*, "with flowers in a raceme," referring to the inflorescence.

Syn.: *Dendrobium racemiflorum* (Sw.) Sw., Nov. Act. Upsal. 6: 83, 1799.

Syn.: *Pleurothallis racemiflora* (Sw.) Lindl., Folia Orchid. *Pleurothallis* 34, 1859, not *P. racemiflora* Lindl. ex Hook. 1824.

Syn.: *Pleurothallis multirostris* Rchb.f., Linnaea 41: 49, 1877.
Ety.: From the Latin *multirostris*, "with many beaks," referring to the flowers in the raceme.

Syn.: *Pleurothallis tricostata* Cogn., Symb. Antill. 7: 175, 1912.
Ety.: From the Latin *tricostatus*, "tricostate," referring to the three ribs of the petals.

Plant large to medium in size, epiphytic, caespitose, roots slender. Ramicauls slender, erect, 3-8 cm long, enclosed by a loose, tubular sheath below the middle and 2 shorter sheaths at the base. **Leaf** erect, coriaceous, elliptical, obtuse, petiolate, 4-8 cm long including the petiole 1 cm long, 1.5-2 cm wide, cuneate below into the petiolate base. **Inflorescence** a subdense, secund, simultaneously several- to many-flowered raceme, 10-26 cm long including the petiole 5-12 cm long, borne laterally from near the apex of the ramicaul, with a conspicuous, foliaceous spathe 1-3 cm long; floral bracts inflated, 4 mm long; pedicel 4-5 mm long; ovary 2 mm long; **sepals** purple, glabrous, with the sides more or less in-

volute above the middle, the dorsal sepal ovate, acute, concave, 9-10 mm long, 2.5 mm wide expanded, 3-veined, the lateral sepals connate to near the apex into an ovate, bifid, bicarinate, concave lamina, 9-10 mm long, 3.5 mm wide expanded, the carinae extending to the acute apices; **petals** translucent with purple veins, broadly elliptical-obovate, rounded at the apex, concave, minutely verrucose externally, 4 mm long, 2 mm wide, 3-veined, with the veins thickened; **lip** dark purple, fleshy, ovate, 3-lobed, 3.75 mm long, 1.5 mm wide, with broadly rounded, erect marginal lobes below the middle, the apical lobe ovate, obtuse, minutely verrucose, the disc minutely verrucose to below the middle, the base hinged to the tip of the column-foot; **column** purple, semiterete, 2.5 mm long, with the apical margin dentate, extending beyond the anther, the anther, rostellum and stigma ventral, the foot 1 mm long with apex free.

CUBA: **Oriente**: Mt. Nimanima, 1856-57, *Wright 616* (Holotype of *P. oblongifolia*: K; Isotypes: AMES, BR, K); Firmeza to Gran Piedra, 4-5 Mar. 1911, *J.A. Schafer 8961* (AMES, K, US); Sierra Maestra: alt. 1800-2000 m, July 1922, *Bro. Leon 10852* (AMES, HAC); Sierra Maestro between Pico Turquino and La Bayamesa, alt. 1350 m, 27 Oct. 1941, *C.V. Morton & J. Acuña 3521* (AMES, US); same area, alt. 4,900-5,200 ft., 16 July 1955, *R.E. Schultes et al. 599* (AMES); Pico Bayamesa, alt. 800-1100 m, 19 Mar. 1970, *H. Lippold 16136* (JE); Cueva de Aura, 30 July 1935, *J.T. Roig, J. Acuña & Bucher 9538* (HAC); camino del Pico Turquino to El Cardero, alt. 1000-1300 m, 14 Apr. 1969, *J. Bisse & H. Lippold 14380* (JE); Pico Palma Mocha, alt. 1400-1500 m, 18 May 1971, *H. Lippold 19218* (JE); Loma del Gato, *Bro. Alain 336* (AMES, HAC); Loma del Gato, 25 Sept. 1935, *J. Acuña 4787* (HAC). **Santiago de Cuba**: Gran Piedra, 28 Jan. 1953, *M. López F. 825* (HAJB); Cordillera de la Gran Piedra, 11 Jan. 1960, *Bro. Alain, J. Acuña & M. López F. 7467* (HAC, HAJB). **Pinar del Río**: Cima del Pan de Guajaibón, 17 Apr. 1954, *J. Acuña 19243* (HAC).
JAMAICA: ca. 1788, *O. Swartz s.n.* (holotype of *Epidendrum racemiflorum*: S; isotypes BM, G, M, W); Without collection data, *McFadyan s.n.* (K). Without locality, 23 Jan. 1888, *Eggers 3543a* (BR, BREM, M); Mt. Moses, alt. 2,500 ft., Nov. 1881, *D. Morris 2073* (K, W); Cuichona, alt. 5,000 ft., 15 Feb. 1900, *W. Harris 7685* (US); vicinity of cinchona, 2-10 Sept. 1906, *N.L. Britton 124* (AMES, NY); St. Andrew Parish, Hardwar Gap, 3 Dec. 1957, *T.G. Yunker 17634* (BM, G); between Morces Gap and John Crow Peak, alt. 5,000 ft., 10 Nov. 1974, *G.R. Proctor 34266* (AMES, IJ); above Hardwar Gap, alt. 1350 m, 13 Nov. 1985, *C. Luer, J. Luer, P. Jesup & A. Jesup 11491* (MO). Without collection data, cultivated at K, 8 Sept. 1873, (holotype of *P. multirostris*: K; illustr. at W).
DOMINICAN REPUBLIC: **Constanza**: epiphytic in forest near Constanza, alt. 1200 m, *H. von Türckheim 3481* (holotype of *P. tricostata* destroyed at B; Neotype here designated: **Azua**: Las Lagunas, alt. 750 m, 12 June 1926, *E.L. Ekman 6343* (K, S). **Monte Cristi**: Monción, Río Cenobicito, alt. 800 m, 22 June 1922, *E.L. Ekman 12955* (AMES, S, US). **Peravia**: Loma Jcnumucú, east of Quita Pena, alt. 1250-1500 m, 13 Sept. 1983, *T. Zanoni, J. Pimentel & R. García 27341* (AMES, JBSD). **La Vega**: Los Tablones, west of La Cienega, alt. 1200 m, 17 July 1967, *G.J. Gastony, G.C. Jones & D. H. Norris 250* (AMES, NY, US). **San Rafael**: Sierra de Neiba, alt. 1700-2000 m, 8 Aug. 1967, *G.J. Gastony, G.C. Jones & D.H. Norris 250* (AMES, NY, US); Loma de la Sal, Jarabacoa, alt. 1420 m, 7 Aug. 1968, *A.H. Liogier 12023* (AMES, US). **Barahona**: Noche Buena, alt. 1750 m, Sept. 1911 *Father Fuertes 1241* (AMES); La Tierra Fria, alt. 4,600 ft., 27 July 1950 m, *R. A. Howard 12229* (AMES).
HAITI: Vicinity of Furcy, alt. 1350 m, 28 May 1920, *E.C. Leonard 4689* (AMES, US); Mornes des Commissaires, 24 Dec. 1944, *I.R. Holdridge 2064* (AMES); Riviere Glace, alt. 2,200 ft., 5 May 1944, *J. T. Curtis 33* (AMES).
PUERTO RICO: Luquillo Mountains, border between municipalities of Río Grande and Naguabo, El Toro trail near summit, cloud forest, epiphytic on *Tabebuia rigida*, alt. 910 m, 24 Nov. 1995, *J.D. Ackerman, R. Tremblay, J. Zimmerman & F. Axelrod 2885* (MO, UPPR).
VENEZUELA: probably **Aragua**: Colonia Tovar, 1854-56, *A. Fendler 1463* (K).

This species was first discovered by Olaf Swartz in Jamaica and described as *Epidendrum racemiflorum* in 1788. It was transferred to *Pleurothallis* by Lindley in 1859, but the combination *Pleurothallis racemiflora* had been used by Loddiges in 1824 for another species. Therefore, the oldest name for this species is Lindley's *P. oblongifolia*, described in 1836 from a Cuban collection by Wright.

Pleurothallis oblongifolia is very closely allied to Central American *P. cobanensis* (including Mexican *P. liebmanniana*) from which it is distinguished only by a smaller habit and flowers, glabrous sepals, and minor differences in the labellum. However, variations seen in Central America include those seen in the Antillean *P. oblongifolia*. I doubt that the West Indian populations have evolved sufficiently to have become specifically distinct, whereupon the whole group probably represents one variable taxon.

Pleurothallis pachyglossa Lindl., Bot. Reg. 26: Misc. 68, 1840.

Ety.: From the Greek *pachyglossa*, "lip thick tongue," in reference to the lip.

Syn.: *Pleurothallis conanthera* Rchb.f., Xenia Orchidaceae 3: 41, 1900.

Ety.: From the Greek *conanthera*, "cone-shaped anther," referring to the shape of the anther-cap.

Syn.: *Humboldtia conanthera* (Rchb.f.) Kuntze, Rev. Gen. Pl. 2: 667, 1891.

Syn.: *Humboldtia pachyglossa* (Lindl.) Kuntze, Rev. Gen. Pl. 2: 668, 1891.

Syn.: *Pleurothallis formosa* Schltr., Repert. Spec. Nov. Regni Veg. 10: 291, 1912.

Ety.: From the Latin *formosus*, "beautiful," referring to the inflorescence.

Plant medium in size, epiphytic, caespitose, roots slender. Ramicauls slender, erect, 5-18 cm long, enclosed by a thin, loose, tubular sheath below the middle and 2 shorter sheaths at the base. **Leaf** erect, coriaceous, elliptical, acute, petiolate, 2-15 cm long including the petiole 1-1.5 cm long, 1.5-2.8 cm wide, narrowly cuneate below into the petiolate base. **Inflorescence** a distantly, few- to several-flowered, subflexuous, successively flowered raceme, up to 40 cm long including the slender peduncle 6-15 cm long, occasionally 2 flowers open simultaneously, borne laterally from near the apex of the ramicaul, about 1 mm below the abscission layer, with a slender spathe 10-18 mm long; floral bracts 5-7 mm long; pedicel 10-15 mm long; ovary 4-6 mm long; **sepals** purple to tan, more darkly suffused along the margins, glabrous, the dorsal sepal elliptical-ovate, acute, concave, 20-22 mm long, 7 mm wide expanded, 3-veined, the lateral sepals connate to above the middle into an elliptical-ovate, bifid, bicarinate, concave lamina, 20-22 mm long, 10 mm wide together expanded, the apices acute; **petals** purple or tan, or green with purple papillae, broadly elliptical-obovate, rounded at the apex, concave, papillose-verrucose externally, 10 mm long, 6 mm wide, 3-veined; **lip** purple or brown, fleshy, subterete, obscurely 3-lobed, 15-17 mm long, 3.5 mm wide, with the margins above the base thin and erect forming rounded lobes, the apical lobe thick, terete, with the apex rounded, minutely verrucose above, coarsely verrucose beneath, the disc shallowly channeled, the base hinged to the tip of the column-foot; **column** green, stout, semiterete-subconical, 3 mm long, with the apical margin extending beyond the anther, the anther, rostellum and stigma ventral, the foot 2 mm long with the apex free.

MEXICO: Without locality, imported and cultivated in England by a *Mr. Barker s.n.* (Holotype: K). **Veracruz**: Córdoba, flowered in cultivation Mar. 1878, in Erfurt, Germany, by *Haage & Schmidt s.n.* (holotype of *P. conanthera*: W). **Puebla**: near Mecaxa, alt. 1000 m, 24 Aug. 1924, *E. Hultén 3962* (AMES). Sierra Santa Marta, San Andis Tuxtla, 15 Mar. 1968, *M. Sousa 3585* (AMES); flowered in cultivation, Nov. 1979, *E. Hagsater & J. Gómez 3959* (AMES, AMO). **Oaxaca**: southwest of La Esperanza, alt. 1650 m, 1 Nov. 1977, *M. Sousa & O. Tellez 8820* (AMO, K).
GUATEMALA: **Alta Verapaz**: Cobán, near Sanchamach, alt. 4,500 ft., Nov. 1877, *H. von Türckheim 12* (W); in forest near Cobán, alt. 1600 m, Oct. 1907, *H. v. Türckheim II-1995* (holotype of *P. formosa*: W; isotypes: AMES, BM, BR, HB, US); same locality, alt. 4,500 ft., Jan. 1888, *H. von Türckheim 799* (BR, K); between Chamá and Cobán, alt. 3,000 ft., 16 Oct. 1920, *H. Johnson 828* (AMES); same area, collected by O. Mittelstaedt, flowered in cultivation in Cobán, 27 Nov. 1990, *C. Luer 14844* (MO); between Cobán and Siguanhá, Chicocon, alt. 4,500 ft., collected by O. Mittelstaedt, flowered in cultivation in Cobán, 13 Feb. 1990, *C. Luer 14612* (MO).
COSTA RICA: without locality, 1867, *A. Endres 41* (W). **Alajuela**: San Pedro de San Ramón, alt. 1190 m, 18 Nov. 1923, *A. M. Brenes 142* (AMES).

This large-flowered species occurs not infrequently in Guatemala and neighboring Mexico, but uncommonly in Costa Rica. It is recognized by the petiolate leaves with an acute apex; a small, slender spathe; and a loose raceme of large, gaping, successive flowers, usually produced one at a time in a loosely flowered raceme. The lip is large, protuberant and semiterete with obscure basal lobes.

Pleurothallis papillifera Rolfe, Bull. Misc. Inform. 77, 1916.

Ety.: From the Latin *papillifer*, "bearing papillae," referring to the verrucose petals.

Plant medium in size, epiphytic, caespitose, roots slender. Ramicauls slender, erect, 4-8 cm long, enclosed by a tubular sheath from below the middle and 2 shorter sheaths at the base. **Leaf** erect, coriaceous, elliptical, obtuse, sessile, 4-14 cm long, 1.5-2.5 cm wide, cuneate below into the base. **Inflorescence** a flexuous, loosely several-flowered raceme, up to 20 cm long including the peticle 7-9 cm long, borne from the apex of the ramicaul at the base of the leaf, with a slender spathe ca. 10 mm long; floral bract thin, 5 mm long; pedicel 8-10 mm long; ovary 4-5 mm long; **sepals** light green, glabrous, the dorsal sepal ovate, acute, concave, 11-15 mm long, 4-5 mm wide expanded, 3-veined, the lateral sepals connate to near the apex into an ovate, minutely bifid, bicarinate, concave lamina, 14 mm long, 6.5 mm wide together expanded, the apices acute; **petals** white, oblong, truncate, shortly unguiculate, 4-6 mm long, 3

mm wide, 3-veined, with the purple papillae on the margins and externally along the veins; **lip** green, 3-lobed, 6.5 mm long, 2 mm wide, with the margins above the base thin and erect forming rounded lobes, the apical lobe fleshy, terete, oblong, acute, with multiple, minute, transverse rugae, carinate beneath, the disc shallowly channeled, the base hinged to the tip of the column-foot; **column** stout, semiterete-subconical, 2 mm long, with the anther subapical and the stigma ventral, the foot 1.5 mm long.

COSTA RICA: without locality, sent to Kew by Lankester, flowered in cultivation at Kew, Nov. 1915 (Holotype: K; Isotype: AMES). **Puntarenas**: Cordillera de Talamanca, Río Canasta, between Cerro Frantzlus and Cerro Pittier, alt. 1500-1600 m, 6 Sept. 1984, *G. Davidse, G. Herrera & M. Grayum 28415* (MO).

This species was described by Rolfe from a cultivated plant sent from Costa Rica by Lankester. Only one subsequent collection can be attributed to the species. Several large, long-pedicellate, light green flowers are produced simultaneously in a tall, flexuous raceme. The dorsal sepal and synsepal are concave and acute. The petals have purple papillae externally along the veins and margins. The lip is thickly terete with minute, transverse rugae, keeled beneath, and three-lobed at the base,

Pleurothallis perennis Luer, Lindleyana 11: 86, 1996.

Ety.: From the Latin *perennis*, "everlasting," in reference to the inflorescence that seems to go on *ad infinitum*.

Plant medium in size, epiphytic, caespitose, roots slender. Ramicauls slender, erect, 4-5 cm long, enclosed by 2-3 loose, tubular sheaths below the middle. **Leaf** erect, coriaceous, elliptical, subacute, sessile, 5-6 cm long, 1.5-2 cm wide, cuneate below into the base. **Inflorescence** a loose, flexible, strict, successively many-flowered raceme, up to 60 cm long including the slender peduncle 6-7 cm long, borne laterally from the apex of the ramicaul at the base of the leaf, with a slender spathe 8 mm long; floral bracts 4-5 mm long; pedicel 5-6 mm long; ovary 4-5 mm long; **sepals** purple, glabrous externally, long-villous pubescent within, carinate, the dorsal sepal elliptical-ovate, acute, concave, 17 mm long, 4.5 mm wide, 3-veined, the lateral sepals connate to near the apex into an elliptical-ovate, bifid, deeply concave synsepal, 17 mm long, 7 mm wide together expanded, the apices acute; **petals** white with 3 purple-black veins, broadly elliptical-obovate, rounded at the apex, concave, papillose-verrucose externally, 5 mm long, 3 mm wide, 3-veined, with 2 of the veins lamellate within above the middle; **lip** purple-black, thickly fleshy, subterete, obscurely 3-lobed, 7 mm long, 1.75 mm wide, with the margins above the base thin and erect forming rounded lobes, the apical lobe thick, semiterete, with the apex acute, minutely verrucose beneath, the disc broadly channeled, the base hinged to the tip of the column-foot; **column** green, stout, semiterete-subconical, 2 mm long, with the apical margin extending beyond the anther, the anther, rostellum and stigma ventral, the foot 1 mm long with the apex free.

COSTA RICA: **Alajuela**: near San Ramón, without other collection data, flowered in cultivation in the Lankester Botanical Garden, Cartago, 18 Mar. 1995, *C. Luer 17418* (Holotype: CR; Isotype: MO).

This species is known from only two cultivated specimens at the Lankester Botanical Garden. They were collected near San Ramón, but other collection data are missing. The elongated, successively many-flowered raceme that continues to produce a solitary flower for many months, perhaps as long as a year, is unique in the subgenus. Forty-three flowers had been produced on one of the arching racemes present. The sessile leaf and subtending spathe are small for the section. The sepals are long-villous within; the petals are papillose externally and lamellate within; and the lip is elongate and acute.

Pleurothallis powellii Schltr., Repert. Spec. Nov. Regni Veg. Beih. 7: 22, 1923.

Ety.: Named in honor of C.W. Powell, noted collector of Panamanian orchids, who first collected this species.

Plant large to very large, epiphytic to terrestrial in humus, caespitose, roots slender. Ramicauls stout, erect, 20-45 cm long, enclosed by a loose, tubular sheath below the middle and 2 shorter sheaths at the base. **Leaf** erect, coriaceous, ovate, subacute to obtuse, sessile, 18-25 cm long, 8-16 cm wide, broadly cuneate to rounded at the base. **Inflorescence** a subdense, secund, simultaneously many-flowered raceme, 15-45 cm long including the petiole 5-10 cm long, borne from the apex of the ramicaul at the base of the leaf, with a spathe 1.5-2.5 cm long; floral bracts 5-7 mm long; pedicel stout, 3 mm long;

ovary purple, subcarinate, 3 mm long; **sepals** dark purple, subcarinate, the dorsal sepal narrowly linear, acute, 17 mm long, 2 mm wide, 3-veined, the lateral sepals connate to near the apex into an elliptical-oblong lamina 17 mm long, 8 mm wide, 12-veined, the apex bifid with acute tips, concave below the middle; **petals** yellow-green, flecked with purple, fleshy, oblong, curved, 5 mm long, 2 mm wide, 3-veined, with a longitudinal callus along the midvein on the inner surface, the apex rounded, concave; **lip** white, suffused and marked with purple, orange at the apex, fleshy, oblong-ovoid, obscurely 3-lobed, 4 mm long, 2.25 mm wide, with the margins tall and erect below the middle, increasing in height to broadly rounded, concave basal lobes, the anterior lobe triangular, acute, the disc with a pair of tall, yellow lamellae between the lateral lobes below the middle extending forward from the base, the base hinged to the tip of the column-foot; **column** marked with purple, stout, semiterete, 3 mm long, with the apical margin extending beyond the anther, the anther, rostellum and stigma ventral, the foot 1 mm long with the apex free.

PANAMA: **Chiriquí**: alt. 3,700 ft., Jan. 1921, *C.W. Powell 146* (Holotype of *P. powellii* presumably destroyed at B; lectotype here designated: AMES, isolectotype: K); Chiriquí, alt. 4,000 ft., collected by H. Butcher, 18 Jan. 1976, flowered in cultivated at SEL, 27 Apr. 1976, *C. Luer 965* (SEL).
COSTA RICA: **Cartago**: Orosi, 30 Mar. 1924 (sterile), *P.C. Standley 39906* (AMES); Carpintera Mts., near Tres Ríos, alt. 1700-1800 m, 21 Sept. 1963, *Cl. Horich s.n.* (AMES, JEPS).

This huge species occcurs uncommonly in the wet, mountainous forests of eastern Costa Rica and western Panama. In common with the similar but larger *P. grandis*, it usually grows terrestrially in rich, shaded humus of virgin forests.

The large flowers are produced simultaneously in long, many-flowered racemes. The dorsal sepal is long and narrow. The petals are narrow and curved with a longitudinal carina on the inner surface. The lip is oblong with erect, concave, lateral lobes above the base with a pair of adjacent lamellae between the lateral lobes.

Pleurothallis ramonensis Schltr., Repert. Spec. Nov. Regni Veg. Beih. 19: 193, 1923.

Ety.: Named for San Ramón, Alajuela, Costa Rica, where the species was collected.

Plant medium in size, epiphytic, caespitose, roots slender. Ramicauls slender, erect, 6-10 cm long, enclosed by a thin, loose, tubular sheath below the middle and 2 shorter sheaths at the base. **Leaf** erect, coriaceous, narrowly elliptical, acute, sessile, 7-10 cm long, 0.8-1.3 cm wide, narrowly cuneate below into the base. **Inflorescence** a loose, simultaneously few- to several-flowered, strict, secund raceme, up to 20 cm long including the slender peduncle 6-10 cm long, borne from the apex of the ramicaul at the base of the leaf, with a slender spathe 5 mm long; floral bracts 5 mm long; pedicel 7-8 mm long; ovary 4-5 mm long; **sepals** purple, darkly suffused with purple along the veins, glabrous, with the margins microscopically ciliate, carinate, the dorsal sepal elliptical-ovate, acute, concave, 15 mm long, 4.5 mm wide, 3-veined, the lateral sepals connate to near the apex into an elliptical-ovate, bifid, deeply concave synsepal, 15 mm long, 8 mm wide together expanded, the apices acute; **petals** translucent white, striped in purple, 15 mm long, 8 mm wide together expanded, the apices acute; **petals** translucent white, striped in purple, broadly elliptical-obovate, rounded at the apex, concave, papillose-verrucose externally, 5.5 mm long, 3.2 mm wide, 3-veined; **lip** green, suffused with purple-brown on the dorsum, thick, subterete, obscurely ovoid, 3-lobed, 6 mm long, 2.4 mm wide, with the margins above the base thin and retrorse forming rounded lobes, the apical lobe thick, semiterete, with the apex acute, microscopically subverrucose, the disc shallowly channeled, the base hinged to the tip of the column-foot; **column** green, stout, semiterete-subconical, 2 mm long, with the apical margin extending beyond the anther, the anther, rostellum and stigma ventral, the foot 2 mm long with the apex free.

COSTA RICA: **Alajuela**: humid forest, San Pedro de San Ramón, alt. 1150 m, July 1921, *A. M. Brenes 88* (Holotype of *P. ramonensis* destroyed at B; lectotype here designated: AMES); San Ramón, collected by J. M. Wubben, flowered in cultivation at Rading, Netherlands, Sept. 1985, *C. Luer 11440* (MO).

This species is apparently rare, having been first collected by Brenes in 1921 near San Ramón, and as far as I know, not again until a collection in the same area by Wubben about 1984. Schlechter stated that the only flower present on his specimen was partially eaten by an insect.

Vegetatively, *P. ramonensis* is distinct in the subgenus with narrowly elliptical, acute leaves with a loose, simultaneously several-flowered raceme that surpasses the leaf. The spathe is small and inconspicuous. The dorsal sepal is acuminate; the synsepal is cymbiform; the obtuse petals are convex and verrucose externally; and the lip is thick, acute at the apex and with erect, retrorse lobes at the base.

Pleurothallis thymochila Luer, Selbyana 3: 398, 1977.

Ety.: From the Greek *thymocheilos*, "lip with warty excrescences," in reference to the verrucose lip.

Plant medium in size, epiphytic, caespitose, roots slender. Ramicauls slender, erect, 3-5 cm long, enclosed by a thin, loose, tubular sheath below the middle and 2 shorter sheaths at the base. **Leaf** erect, coriaceous, elliptical, obtuse, subsessile, 5-8 cm long, 2-3 cm wide, narrowly cuneate below into the base. **Inflorescence** a distantly several-flowered, subflexuous raceme, up to 28 cm long including the slender peduncle ca. 10 cm long, 2-3 flowers open simultaneously, borne from near the apex of the ramicaul, barely 1 mm below the abscission layer, with a slender spathe 6-9 mm long; floral bracts 3-4 mm long; pedicel 6-11 mm long; ovary 4 mm long; **sepals** dark red-purple with involute margins, glabrous, the dorsal sepal elliptical-ovate, acute, concave, 11 mm long, 4.5 mm wide, 3-veined, the lateral sepals connate to above the middle into an elliptical-ovate, bifid, bicarinate, concave lamina with the sides below the middle folded in, 11 mm long, 7 mm wide together expanded, the carinae taller and irregular toward the acute apices; **petals** red-purple, broadly obovate, rounded at the apex, concave, papillose-verrucose externally, 4.5 mm long, 2.5 mm wide, 3-veined, with the veins subcarinate on the inner surface; **lip** dark purple, fleshy, ovoid, 3-lobed, 5 mm long, 2 mm wide, with the margins thin and erect in the basal fourth forming broadly rounded lobes above the base, the apical lobe thick, ovoid, obtuse, coarsely papillose-verrucose, the disc broad, verrucose, concave above a transverse, basal callus, the base hinged to the tip of the column-foot; **column** red, stout, semiterete, 2 mm long, with the apical margin extending beyond the anther, the anther, rostellum and stigma ventral, the foot with the apex free.

PANAMA: **Panamá**: epiphytic along the El Llano-Carti road, alt. ca. 350 m, 3 Mar. 1976, *C. Luer, J. Luer, P. Taylor & R.L. Dressler 992* (Holotype: SEL); Cerro Colorado, alt. 1400-1700 m, 24 Oct. 1977, *J.P. Folsum 6111* (MO). **Coclé**: Alto Calvario, north of El Copé, alt. 850 m, 19 May 1977, *J.P. Folsom & R. Button 3289* (MO).

This species is most similar to *P. pachyglossa*, but *P. thymochila* is distinguished from it and all the other members of the subgenus by obtuse, sessile leaves; an inconspicuous spathe; loose, successively flowered racemes of medium-sized flowers with rounded, erect basal lobes of a broad, thick, verrucose lip.

Pleurothallis tintinnabula Luer, Lindleyana 11: 94, 1996.

Ety.: From the Latin *tintinnabula*, "bells," alluding to the fancied appearance of the flowers.

Plant small to medium in size, epiphytic, caespitose, roots slender. Ramicauls slender, erect, 3-9 cm long, enclosed by a thin, closely fitting tubular sheath below the middle and 2 shorter sheaths at the base. **Leaf** erect, coriaceous, elliptical, acute, sessile, 3-7 cm long, 1-2.5 cm wide, cuneate below into the base. **Inflorescence** a loose, secund, flexuous, simultaneously 4- to 6-flowered raceme, 6-8 cm long including the slender peduncle 2-3 cm long, borne laterally from the apex of the ramicaul at the base of the leaf, with a spathe ca. 3 mm long; floral bracts 3-4 mm long; pedicel 5 mm long; ovary 3 mm long; **sepals** mottled with dark purple, glabrous, concave, the dorsal sepal elliptical, obtuse, 9 mm long, 6.5 mm wide expanded, 3-veined, the lateral sepals connate to near the apex into an elliptical, shortly bifid lamina, 9 mm long, 6 mm wide expanded; **petals** dark purple, elliptical, concave, rounded at the apex, verrucose externally, 6 mm long, 3.5 mm wide, 3-veined, with the veins prominent on the inner surface in the distal half; **lip** dark purple, fleshy, ovoid, 3-lobed, 5.5 mm long, 2 mm wide, the margins thin and erect below the middle forming rounded, basal lobes above the base, the apical lobe elliptical, obtuse, minutely verrucose, convex, the disc concave below the middle above a transverse callus at the base, hinged to the tip of the column-foot; **column** stout, subconical, 2 mm long, with the margin extending beyond the anther, the anther, rostellum and stigma ventral, the foot 1 mm long with the apex free.

COSTA RICA: **Guanacaste**: Monteverde Forest Reserve, alt. ca. 1400 m, 1989, *J. T. Atwood 89-235* (Holotype: SEL), C. Luer illustr. 17052; same area, 1989, *J. T. Atwood 89-132* (K, SEL).

This species, apparently endemic in the mountains of the Monteverde Forest Reserve, is most similar to *P. papillifera*. It is distinguished from the latter as well as from others of the subgenus by the small habit; an acute, elliptical leaf; a flexuous raceme longer than the leaf with several, nutant, purple flowers; obtuse, concave dorsal sepal and synsepal; obtuse, concave, verrucose petals; and a thick, ovate, obtuse, subverrucose lip with thin, erect, rounded, basal lobes.

Pleurothallis tuerckheimii Schltr., Repert. Spec. Nov. Regni Veg. 10: 292, 1912.

Ety.: Named in honor of Hans von Türckheim who discovered this species.

Syn.: *Pleurothallis megachlamys* Schltr., Repert. Spec, Nov. Regni Veg. Beih. 19: 108, 1923.
Ety.: From the Greek *megachlamys*, "with a large cloak," referring to the cauline sheaths.

Plant large to medium in size, epiphytic, caespitose, roots slender. Ramicauls stout, erect, 20-30 cm long, enclosed by a loose, tubular sheath below the middle and 2 shorter sheaths at the base. **Leaf** erect, coriaceous, elliptical, subacute, petiolate, 10-20 cm long including the petiole 2-3 cm long, 4-6 cm wide, cuneate below into the petiolate base. **Inflorescence** a subdense, distichous, lightly flexuous, simultaneously several- to many-flowered raceme, up to 45 cm long including the petiole ca. 10 cm long, borne laterally from near the apex of the ramicaul, with a conspicuous, foliaceous spathe 4-7 cm long; floral bracts 5-9 mm long; pedicel 5-10 mm long; ovary 3-4 mm long; **sepals** dark red-brown to purple, villous within above the middle, with the sides more or less involute above the middle, the dorsal sepal ovate, acute, concave, 15-25 mm long, 5-7 mm wide expanded, 3-veined, the lateral sepals connate to near the apex into an ovate, bifid, bicarinate, concave lamina, 15-22 mm long, 8-10 mm wide together expanded, the apices acute; **petals** translucent with purple veins, broadly elliptical-obovate, rounded at the apex, concave, verrucose externally, 8-10 mm long, 4-5 mm wide, 3-veined; **lip** dark purple or red-brown, fleshy, subterete, 3-lobed, 9-12 mm long, 3 mm wide, with the margins above the base thin and erect forming rounded lobes, the apical lobe thick, semiterete, with the apex obtuse, apiculate, the disc thickened, minutely verrucose, the base hinged to the tip of the column-foot; **column** green, stout, semiterete-subconical, 3 mm long, with the apical margin extending beyond the anther, the anther, rostellum and stigma ventral, the foot 3 mm long with the apex free.

GUATEMALA: **Alta Verapaz**: epiphytic in forest near Cobán, alt. ca. 1600 m, Nov. 1907, *H. von Türckheim II 1996* (Holotype of *P. tuerckheimii* destroyed at B; lectotype here designated: AMES 18594; isolectotypes: BM, BR, HB, NY, US, W); Cobán, alt. 1350 m, Sept. 1912, *H. von Türckheim s.n.* (AMES, W); near Cobán, alt. 4,300 ft., Aug. 1878, *H. von Türckheim 254* (W); Chicayosito near Cobán, Nov. 1878, *H. von Türckheim 318* (W); between Cobán and San Pedro, alt. 4,000 ft., 20 Sept. 1920, *H. Johnson 756* (AMES); swamp east of Tactic, alt. 1450 m, 14 Apr. 1941, *P.C. Standley 92390* (AMES); near Cobán, collected by O. Mittelstaedt, flowered in cultivation in Cobán, 27 Nov. 1990, *C. Luer 14842* (MO). **Zacapa**: Sierra de Las Minas, vicinity of Finca Planados, alt. 2500 m, 14 Oct. 1939, *J.A. Steyermark 29998* (AMES); Monte Virgen, alt. 2200-2400 m, 12 Jan. 1942, *J.A. Steyermark 42627* (AMES).
MEXICO: **Chiapas**: near La Selva, alt. 1000 m, 3 Oct. 1938, *O. Nagel 5573* (AMES); Mt. Boquerón above Hueixtla, alt. 1500 m, 4 Nov. 1937, *O. Nagel 4309* (AMES, BM); east of Comitán, alt. 1300 m, 24 Oct. 1938, *O. Nagel 6595* (AMES); Haciendita Escuintla, alt. 1950 m, 23 June 1945, *E. Matuda 5991* (AMES). **Oaxaca**: Tres Picos, 22 Sept. 1959, *G.C. Kennedy s.n.* (AMES).
HONDURAS: **Tegucigalpa**: vicinity of San Juancito Aguacatal, alt. 5,200 ft., *J.B. Edwards 115* (AMES). **Morazán**: Mt. Uyuca, alt. 6,300 ft., 17 July 1948, *S.F. Glassman 1946* (AMES, OKL).EL
SALVADOR: Cerro Montecristo, alt. 2100 m, 25 May 1975, *F. Hamer 466* (AMES).
NICARAGUA: **Jinotega**: between Matagalpa and Jinotega, *Moreno 1103* (MO, SEL); Macizos de Peñas Blancas, alt, 1200-1400 m, *D. Stevens 11228* (MO); Sta. Maria de Ostumas, alt. 1170 m, *A. Heller 2710* (SEL); between Potter's Folly and Jinotega Rock Quarry, alt. 1230 m, *A. Heller 8649* (SEL).
COSTA RICA: Without locality, ca. 1867, *A. Endres s.n., 3, 122, 179, 189, 211, 231, 236, 502* (W). Without locality, collected 12 Oct. 1949, flowered at K, *C. H. Lankester s.n.* (K). **Alajuela**: San Pedro de San Ramón, alt. 1190 m, 15 Nov. 1922, *A.M. Brenes 126* (AMES); Las Nubes, alt. 1600 m, 7 Aug. 1938, *M. Valerio 2639* (AMES); Volcán Poás near Los Cartagos, alt. 2000 m, 1 May 1949, *L. O. Williams 16595* (AMES); Palmira, alt. 2400 m, 16 May 1938, *A. Smith H-593* (AMES, NY). **Cartago**: Tablazo, alt. 1900 m, *A. & C. Brade 1329* (holotype of *P. megachlamys* presumably destroyed at B; lectotype here designated: AMES 31256, illustr. of type); Jucosal, alt. 5,000 ft., *C. H. Lankester 466* (AMES). **Puntarenas**: Monteverde, alt. 1600 m, 5 Aug. 1990, *J. Atwood, S. Ingram & K. Ferrell 4125* (CR, SEL); in pasture near the Monteverde Reserve, alt. 1500 m, 21 Mar. 1995, *C. Luer, J. Luer & J. Atwood 17459* (MO).
PANAMA: **Chiriquí**: Río Chiriquí Viejo, vicinity of Monte Lirio, alt. 1300-1900 m, 27 June-13 July 1935, *R.J. Seibert 142* (MO); same area, July-Aug. 1937, *G. White & P. White 18* (AMES).

This large, spectacular species is frequent and widely distributed through Central America from Mexico into Panama. It is also variable, with several distinct character-populations known to grow in Guatemala where it is most frequent. It is characterized by large, petiolate leaves; a large, foliaceous spathe; and a long, arching raceme of numerous, large, simultaneous flowers. The usually dark purple sepals are narrow and acute, with the laterals forming a cymbiform synsepal with incurved sides. The petals are concave and verrucose externally. The lip is more or less terete, pointed at the apex, and with erect, rounded, basal lobes.

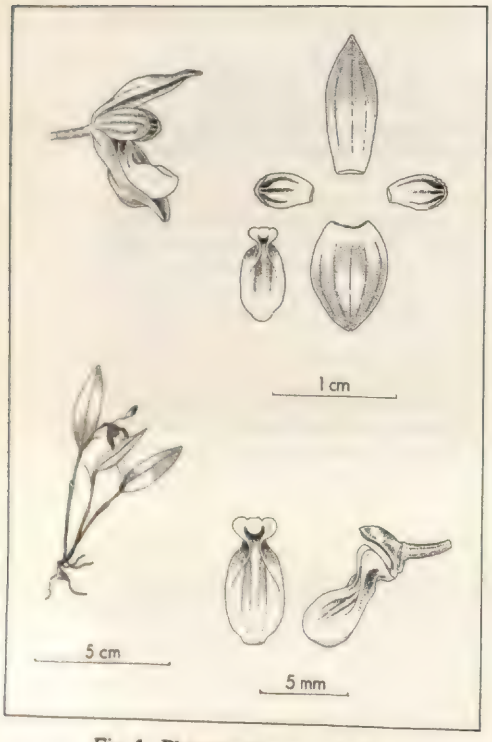


Fig. 1. Pleurothallis carnosilabia

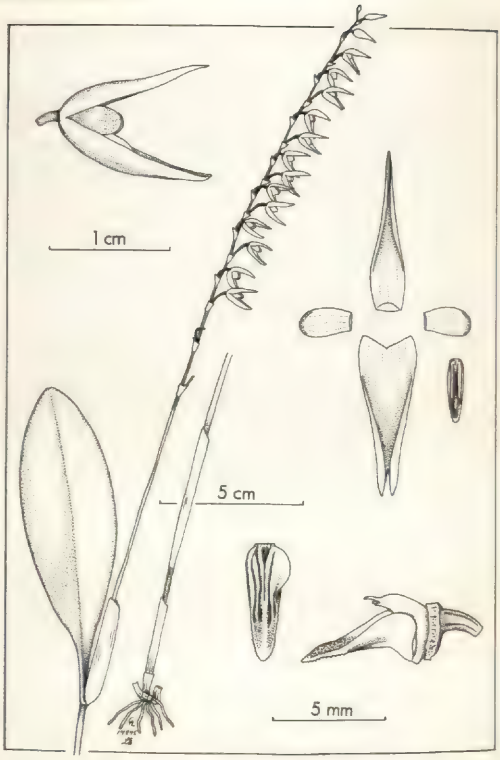


Fig. 2. Pleurothallis cobanensis

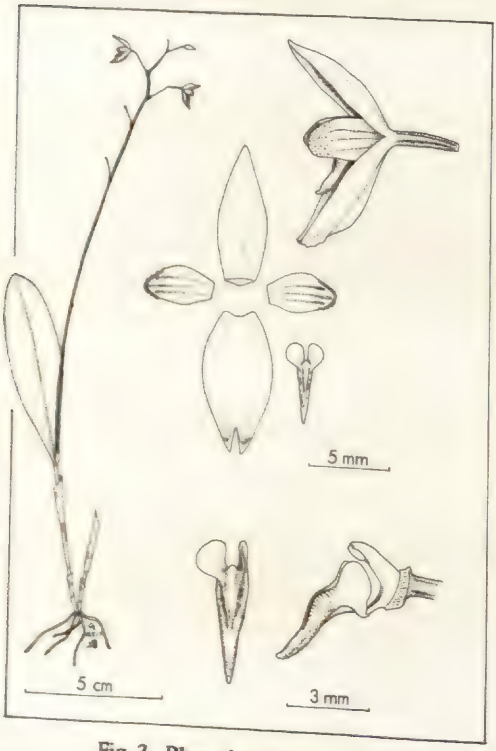


Fig. 3. Pleurothallis conochila

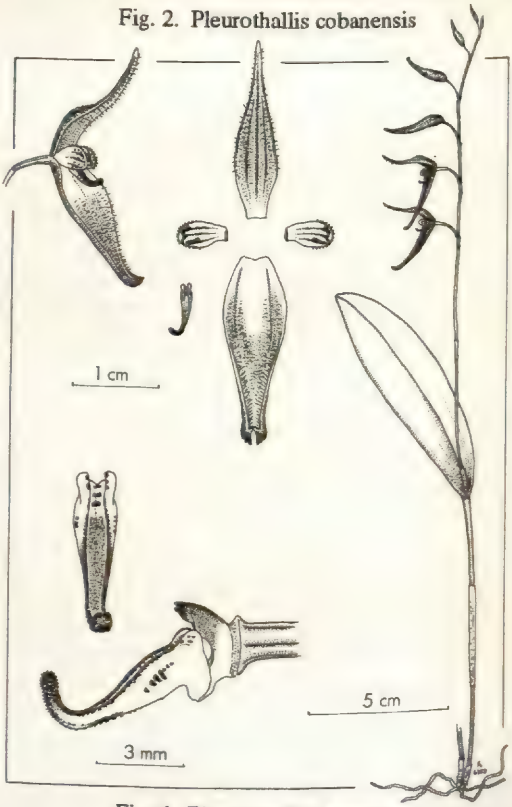


Fig. 4. Pleurothallis dracontea

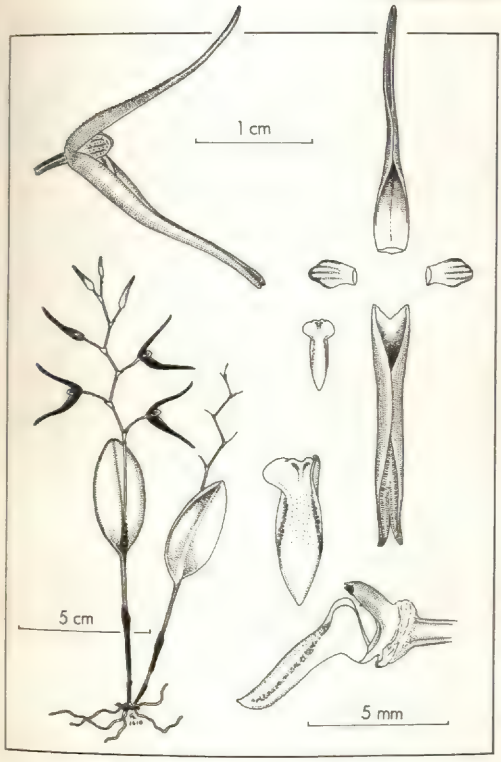


Fig. 5. Pleurothallis fortunae

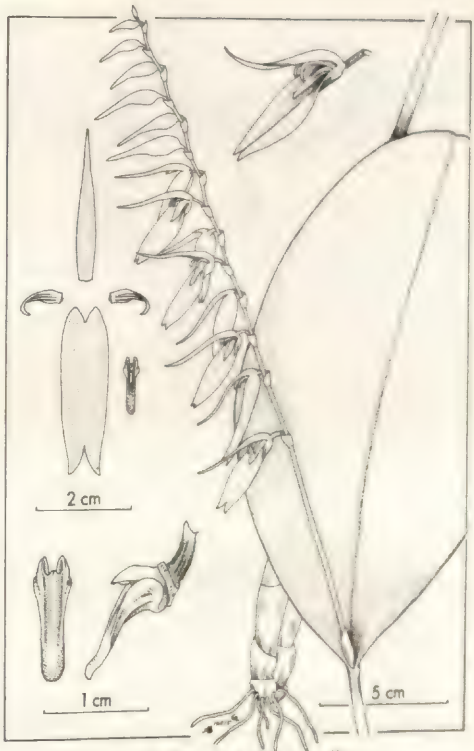


Fig. 6. Pleurothallis grandis

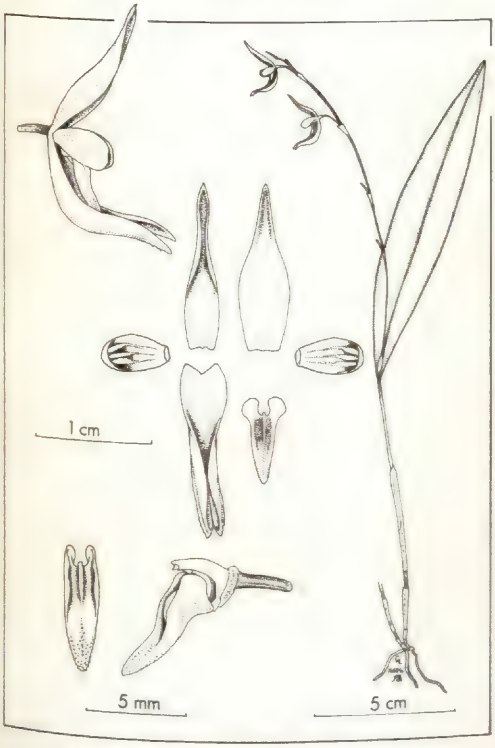


Fig. 7. Pleurothallis ingramii

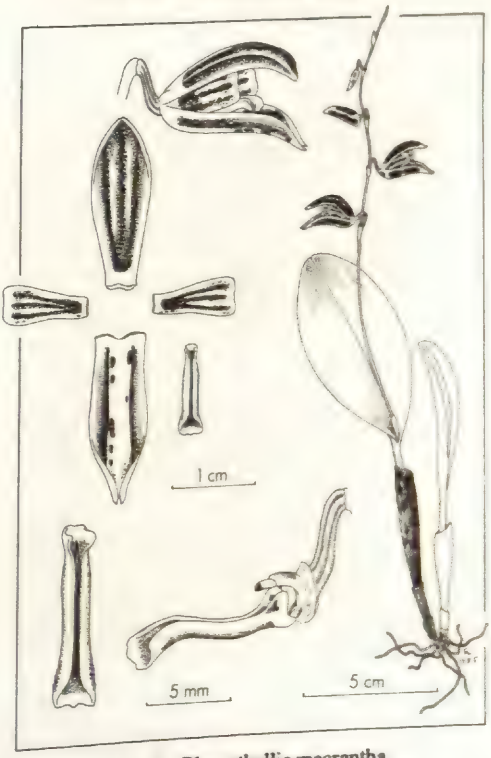


Fig. 8. Pleurothallis macrantha

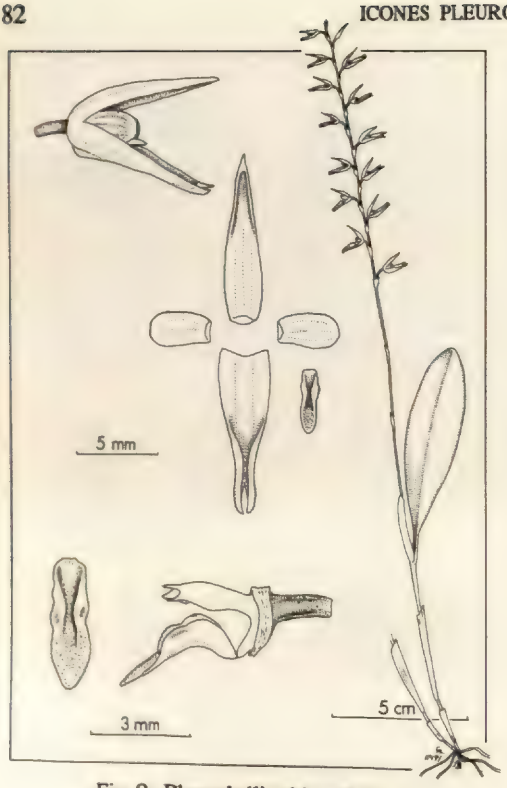


Fig. 9. Pleurothallis oblongifolia

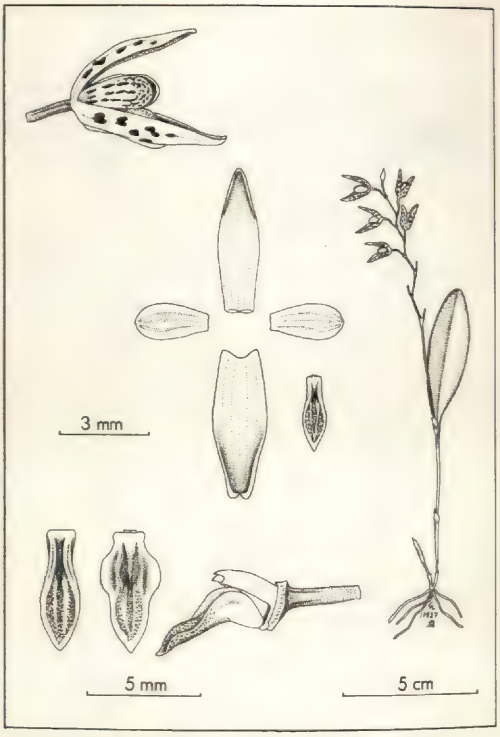


Fig. 10. Pleurothallis oblongifolia

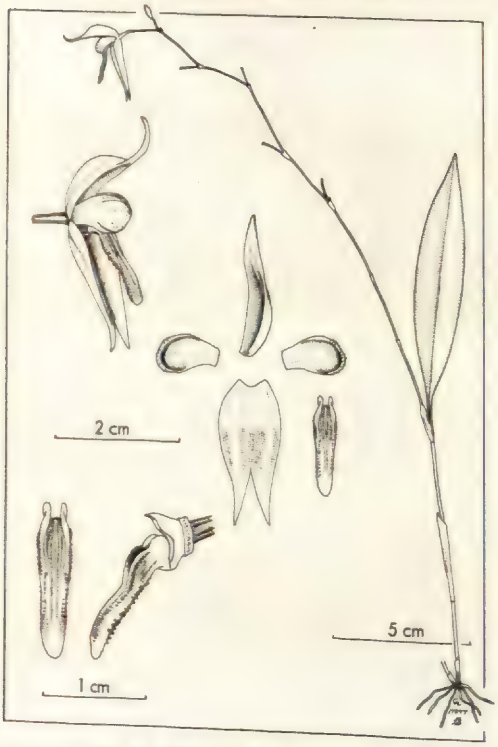


Fig. 11. Pleurothallis pachyglossa

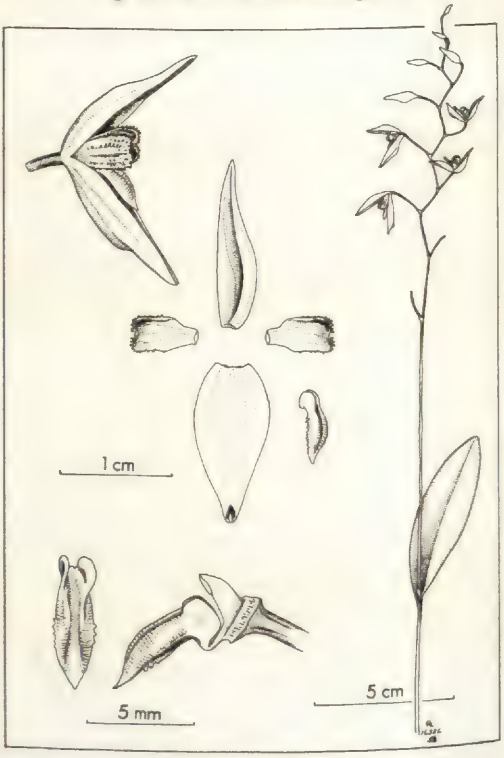


Fig. 12. Pleurothallis papillifera

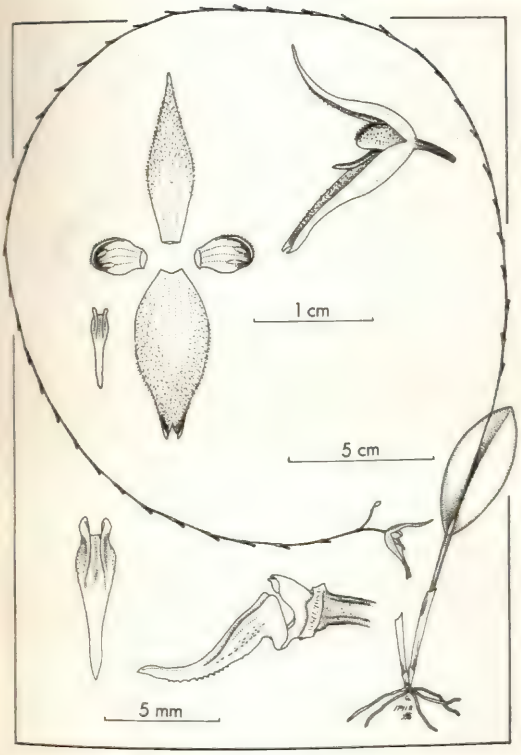


Fig. 13. Pleurothallis perennis

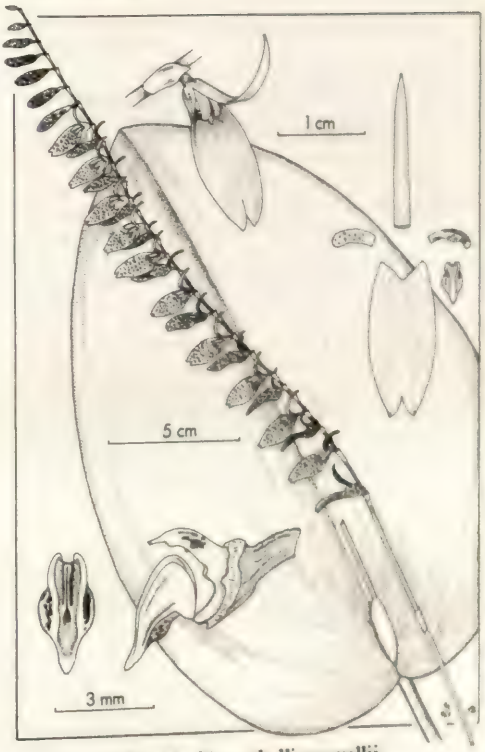


Fig. 14. Pleurothallis powellii

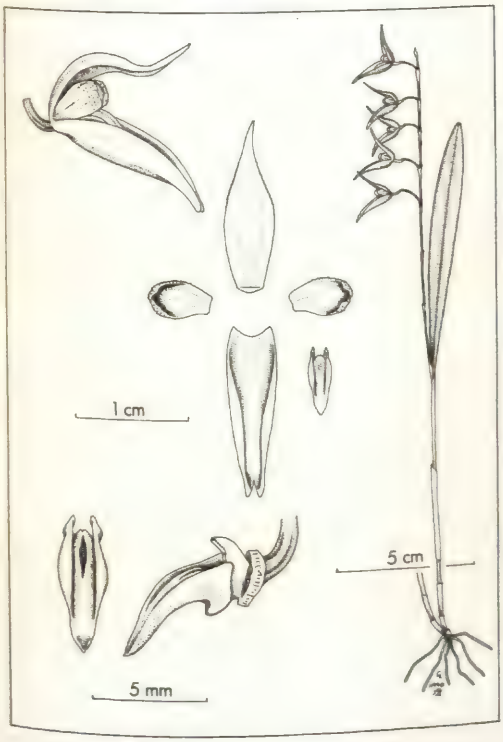
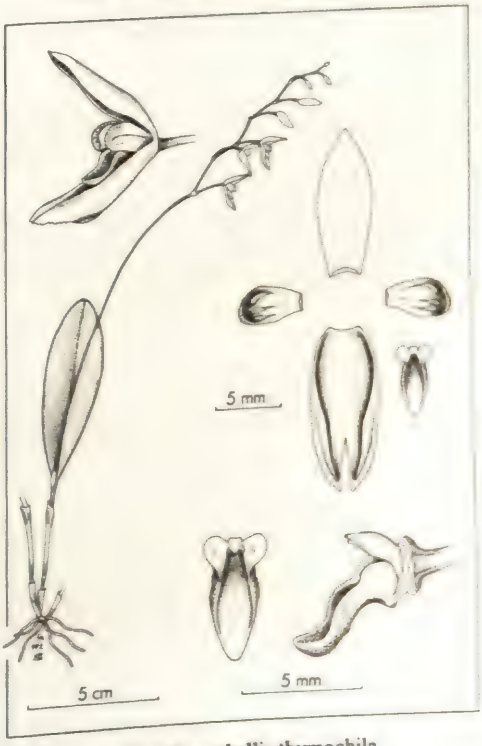


Fig. 15. Pleurothallis ramonensis



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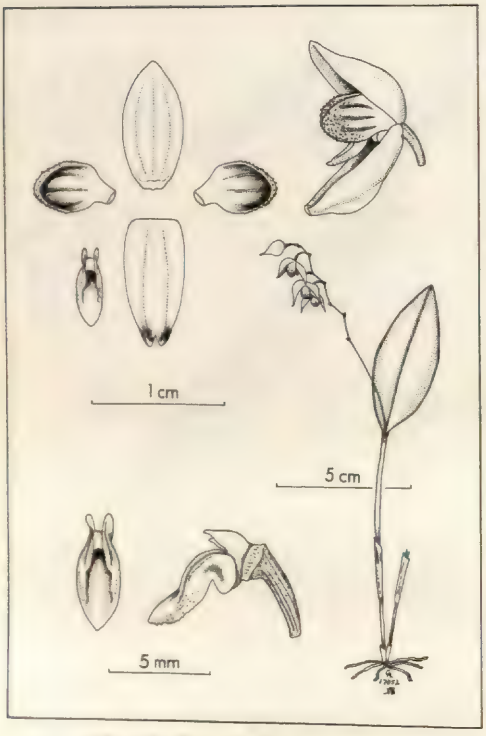
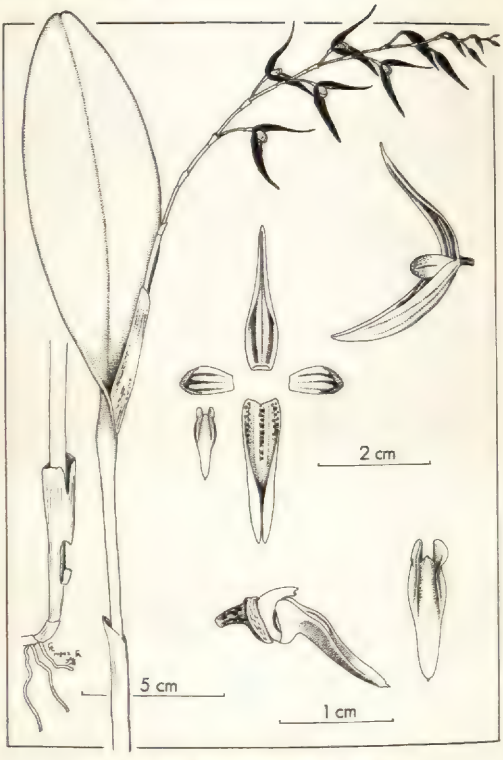


Fig. 17. Pleurothallis tintinnabula



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SYSTEMATICS OF *PLEUROTHALLIS* SUBGENUS *UNCIFERIA* (ORCHIDACEAE)

ABSTRACT

Subgenus *Unciferia* Luer of genus *Pleurothallis* R.Br. is described. A key to the species is given. Each species is described and illustrated with a black and white drawing.

Taxon et stat. nov.:
Subgen. **Unciferia** Luer, stat. nov.
Pleurothallis psilantha Luer, sp. nov.

This subgenus was proposed as section *Unciferae* of subgenus *Specklinia* (Lindl.) Garay in *Icones Pleurothallidinarum III* (Luer, 1986). However, as *Specklinia* is now more narrowly defined, the section is raised here to the subgeneric level. It constitutes a small but well-defined unit. The first species attributable to the subgenus is *Pleurothallis segoviensis*, described by Reichenbach in 1855 from a collection by Oersted near Segovia, Costa Rica. He placed it in the unranked infrageneric category *Elongatae Racemosae Disepalae*. In 1859, Lindley placed it in section *Apodae-Caespitosae* because of the short ramicauls. Between 1911 and 1925, eleven binomials were subsequently added for closely related taxa by Ames and Schlechter. These binomials have been reduced, at one time or another, to the synonymy of *P. segoviensis*. The latter taxon has been treated as one "super species" (Williams, 1946). Four of the eleven segregates differ significantly from *P. segoviensis* to be recognized separately, the rest being retained as variations of *P. segoviensis*.

Vegetatively, the subgenus is characterized by a very short rhizome that produces a caespitose habit. The ramicauls are distinctly shorter than the thinly coriaceous leaves they bear. The inflorescence emerges laterally from the ramicaul with an annulus a short distance below the abscission layer. It often ascends in the sulcus of the conduplicate base of the leaf. The inflorescence is a few- to many-flowered raceme, shorter or much longer than the leaf, and either simultaneously or successively flowered.

The flowers are relatively small, and of a basic pattern. The sepals are not caudate, and either glabrous or pubescent within. The dorsal sepal is three-veined and essentially free from the laterals except for a negligible connation at the base. The lateral sepals are connate, at least above the middle. The size of the sepals seems to vary considerably within the species.

The petals are membranous, simple and single-veined. The lip is lobed above the base, and the lobes are modifications of an uncinate form. The disc is smooth or variously sulcate between a pair of carina that extend forward from the base. Also, a converging pair of calli extend forward from the bases of the lateral lobes. The base of the lip is simply hinged to a short column-foot. The column is semiterete and variously toothed at the apex that covers the anther. The anther cap is deciduous with a pair of free, obovoid pollinia. The stigma is ventral, lying behind the rostellum.

A problem commonly encountered in many pleurothallid taxa also plagues this section. Within the wide distribution of a "mother-species" (species-complex, or

super-species if you like), variations difficult to differentiate acquire specific recognition. Of the 11 allied taxa described between 1911 and 1925, only four seem to be sufficiently distinct from the variable *P. segoviensis* to be retained at the specific level.

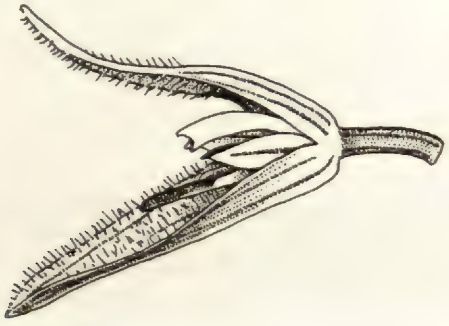
Vegetatively, *P. pompalis* is larger vegetatively with larger flowers, and the basal lobes of the lip are very small, erect and subquadrate. The Panamanian *P. canae* is also large vegetatively with large, gaping flowers, but it is distinguished by short, broad, flat, basal lobes of the lip. *Pleurothallis wagneri* (syn.: *P. aguilarii* and *P. falcatiloba*) is distinguished by the short, secund raceme of long flowers with proportionately small petals. *Pleurothallis bifalcis* is distinguished by the large habit with the largest flowers with narrowly falcate lobes of the lip.

The remaining taxa are too similar to *P. segoviensis* to maintain. Both *P. johannis* from Guatemala and *P. melicoides* from Costa Rica were distinguished by longer, slightly flexuous racemes of smaller flowers. *Pleurothallis amethystina* from Guatemala, and Costa Rican *P. wercklei* and *P. vinacea* were distinguished by shorter, strict racemes of only slightly larger flowers. The tips of the uncinate lobes of the lip were distinguished as being more acute in *P. wercklei*. Numerous intermediate populations exist throughout the range of *P. segoviensis*.

Although obviously closely related to all the others, the three additional Central American species are distinct from *P. segoviensis*. The flowers of *P. kareniae* are totally glabrous, fleshy and thickly carinate. The basal labellar lobes are short and broad, and a deep channel courses three-fourths the length of the disc of the lip. The flowers of the small *P. psilantha* are also totally glabrous, fleshy and thickly carinate, and the uncinate-lobed lip is similar to that of *P. segoviensis*, but the base of the lip is smooth and only thickened, devoid of any callus. The synsepal of the larger *P. pilostoma* is broad and concave, and the basal labellar lobes are short and broadly cuneate.

With the present addition of the three species from Central America, eight species are recognized here from Guatemala to western Panama. The first species of the section from the Andes was described in 1981. A second from Ecuador is now added. Both these species are distinguished by broad, uncinate, labellar lobes.

All ten species of the genus recognized here are epiphytic in moist or wet forests of Central America and the Andes from low to moderately high altitudes. They are usually easy to cultivate, and flower regularly.



SUBGENUS *UNCIFERIA*

Pleurothallis subgen. **Unciferia** (Luer) Luer, stat. nov.

Bas.: **Pleurothallis** subgen. **Specklinia** sect. **Unciferae** Luer, Monogr. Syst. Bot. 20: 94, 1986.
Type: *Pleurothallis segoviensis* Rchb.f., Bonplandia 3: 223, 1855.
Ety.: From the Latin *uncifer*, "hook-bearing," referring to the lateral lobes.

Plants perennial, small to medium in size, epiphytic, usually densely caespitose; roots slender, fasciculate. Ramicauls erect, slender, shorter than the leaf, enclosed by 2-3 thin, ribbed, glabrous sheaths. **Leaf** erect, coriaceous, smooth, green, more or less narrowly obovate, with the apex acute, subacute, obtuse or rounded, shallowly notched with a mucro in the sinus, the base conduplicate, narrowly cuneate below into an indistinct petiole. **Inflorescence** a simultaneously to successively few- to many-flowered raceme, the flowers resupinate, variously colored, borne by a slender peduncle that emerges laterally from the ramicaul with an annulus below the abscission layer; floral bracts tubular, acute; pedicels slender, about as long as the floral bract; ovary smooth, trivalvate; **sepals** membranous, 3-veined, commonly carinate externally, densely pubescent to glabrous within, acute to subacute, noncaudate, the dorsal sepal free from the lateral sepals, the lateral sepals connate, rarely semiconnate; **petals** membranous, simple, 1-veined; **lip** trilobed, the lateral lobes more or less uncinate, basal or below the middle, the disc bicarinate, the base delicately hinged to the column-foot; **column** semiterete, variously denticulate at the apex, the anther and stigma ventral, the pollinia 2, obovoid, with a microscopic viscidium, the base of the column produced into a short foot with the apex of the ovary.

BINOMIALS PUBLISHED IN *PLEUROTHALLIS* REFERABLE TO SUBGENUS *UNCIFERIA*

Pleurothallis aguilarii Ames = **P. wagneri**
Pleurothallis amaliae Luer & Escobar ..... Fig. 1.
Pleurothallis ancistra Luer & Hirtz ..... Fig. 2.
Pleurothallis amethystina Ames = **P. segoviensis**
Pleurothallis bifalcis Schltr. ..... Fig. 3.
Pleurothallis canae Ames ..... Fig. 4.
Pleurothallis falcatiloba Ames = **P. wagneri**
Pleurothallis johannis Schltr. = **P. segoviensis**
Pleurothallis kareniae Luer ..... Fig. 5.
Pleurothallis melicoides Schltr. = **P. segoviensis**
Pleurothallis pilostoma Luer ..... Fig. 6.
Pleurothallis pompalis Ames ..... Fig. 7.
Pleurothallis psilantha Luer ..... Fig. 8.
Pleurothallis segoviensis Rchb.f. ..... Figs. 9., 10., 11.
Pleurothallis vinacea Ames = **P. segoviensis**
Pleurothallis wagneri Schltr. ..... Fig. 12.
Pleurothallis wercklei Schltr. = **P. segoviensis**

KEY TO THE SPECIES OF SUBGENUS *UNCIFERIA*

1 Lip with lobes broader at the base than long.....2
1' Lip with lobes narrower at the base, or about as broad as long.....4

2 Sepals glabrous; lip with disc deeply channeled.....*P. kareniae*
2' Sepals long-pubescent within; lip with disc bilamellate.....3

3 Sepals narrowly ovate, shallowly concave.....*P. canae*
3' Sepals ovate, deeply concave.....*P. pilostoma*

4 Lip with lobes broadly falcate.....5
4' Lip with lobes not broadly falcate.....6

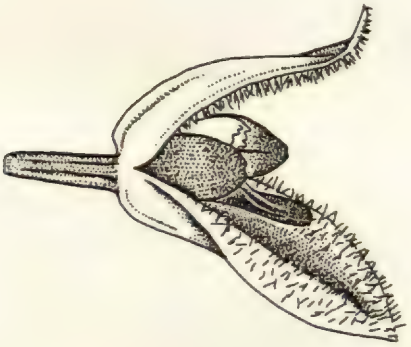
5 Raceme far exceeding the leaf; lip with calli converging.....*P. amaliae*
5' Raceme barely exceeding the leaf; lip with calli parallel.....*P. ancistra*

6 Lip with lobes small, erect, more or less quadrate with an antrorse lobule.....
.....*P. pompalis*
6' Lip with lobes narrowly uncinate.....7

7 Sepals glabrous, fleshy-carinate; lip without callus at the base.....*P. psilantha*
7' Sepals pubescent within; lip variously callus at the base.....8

8 Sepals less than 10 mm long.....*P. segoviensis*
8' Sepals more than 11 mm long.....9

9 Raceme flexuous, sepals spreading.....*P. bifalcis*
9' Raceme secund, sepals parallel.....*P. wagneri*



Pleurothallis amaliae Luer & Escobar, Orquideología 14: 124, 1981.

Ety.: Named in honor of the late Amalia Lehmann de Sarria, granddaughter of F. C. Lehmann, in whose collection in Popayán, Colombia, this species was discovered.

Plant small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 1-2 cm long, enclosed by 2 tubular sheaths. **Leaf** erect, coriaceous, narrowly obovate, subacute to obtuse at the apex, 4-9 cm long, 0.8-1.5 cm wide, narrowly cuneate below into the conduplicate base. **Inflorescence** an erect, subflexuous, loose, distichous, successively many-flowered raceme up to 35 cm long including the peduncle 5-7 cm long, borne from near the apex of the ramicaul; floral bracts oblique, acute, 2.5-3 mm long; pedicel 2.5-3 mm long; ovary 1.5-2 mm long; **sepals** yellow, sparsely spotted with purple, carinate, apiculate, glabrous, the dorsal sepal ovate, acute, concave, 5-5.5 mm long, 2.5-3 mm wide, the lateral sepals connate into an ovate, bifid lamina, 5.5-6 mm long, 3.5-4 mm wide, with the apices free 1 mm, acute; **petals** purple, membranous, elliptical-obovate, obtuse, minutely erose, 2-2.5 mm long, 1-1.5 mm wide; **lip** dark purple, trilobed, 3 mm long, 2 mm wide, 4 mm wide across the lateral lobes expanded, the middle lobe oblong, erose, with the apex rounded, slightly concave, the lateral lobes below the middle, erect, broadly uncinate, antrorse, acute, the disc sulcate centrally between a pair of longitudinal calli that course from the base, and a pair of diagonal, converging calli from the bases of the lateral lobes to meet above the middle of the disc, the base decurved, shortly unguiculate, delicately hinged to the column-foot; **column** semiterete, 1.5-2 mm long, winged and denticulate at the apex, the foot thick, 1.5 mm long, the anther, rostellum and stigma ventral.

COLOMBIA: **Cauca**: without locality or collector, flowered in the collection of Amalia Lehmann de Sarria, 25 July 1978, *C. Luer 3006* (Holotype: SEL). **Valle del Cauca**: near the coast of Buenaventura, alt. 0-400 m, 21 Sept. 1882, *F.C. Lehmann 1911* (K); Buenaventura, Las Juntas del Dagua, alt. 300 m, *F.C. Lehmann 4527* (K); epiphytic in moist forest around Las Juntas an the Río Dagua, alt. 100-500 m, *F.C. Lehmann B.T.388* (K). C. Luer illustr. 17087.

This species, apparently endemic in southern Colombia, is related to the large *P. segoviensis*-complex of Central America. It was first collected in the nineteenth century by Consul Lehmann. It was found in flower about a century later in the orchid collection of his granddaughter in Popayán. *Pleurothallis amaliae* is distinguished by the abbreviated ramicauls and a narrowly obovate leaf that is far surpassed by the continually flowering raceme. The sepals are acute and glabrous, and the basal lobes of the lip are large and uncinate. A pair of carinae converges from both sides of the disc to meet above the middle. The margins of the anterior lobe, as well as the petals, are minutely serrate.

Pleurothallis ancistra Luer & Hirtz, Lindleyana 11: 144, 1996.

Ety.: From the Greek *ankistros*, "with hooks," referring to the lobes of the lip.

Plant small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 0.5-1 cm long, enclosed by 2 tubular sheaths. **Leaf** erect, coriaceous, narrowly obovate, obtuse to rounded at the apex, 2-4.5 cm long, 0.4-0.7 cm wide, narrowly cuneate below into the conduplicate base. **Inflorescence** an erect, strict, secund, loose, successively several-flowered raceme up to 7 cm long including the peduncle 2-4 cm long, borne from the apex of the ramicaul, with the flowers often cleistogamous; floral bracts oblique, acute, 2.5-3 mm long; pedicel 2 mm long; ovary 1.5-2 mm long; **sepals** yellow, carinate, pubescent within above the middle, the dorsal sepal elliptical-ovate, acute, 3 mm long, 1.4 mm wide, the lateral sepals connate into an elliptical, acute, bifid lamina, 3 mm long, 1-3-1.75 mm wide; **petals** yellow, membranous, oblong, obtuse to rounded at the apex, 2 mm long, 0.6 mm wide; **lip** yellow, trilobed, 2 mm long, 1 mm wide, 2 mm wide across the lateral lobes expanded, the middle lobe oblong with the apex rounded, slightly concave with the margins cellular, the lateral lobes below the middle, erect, broadly uncinate, antrorse, acute, the disc shallowly sulcate with three low, parallel calli, and with a subverrucose pair of calli converging onto the anterior lobe from the bases of the lateral lobes, microscopically transversely rugose-papillose at the base, the base shortly unguiculate, delicately hinged to the column-foot; **column** semiterete, 1.5 mm long, winged and dentate at the apex, the foot thick, 0.75 mm long, the anther, rostellum and stigma ventral.

ECUADOR: **Imbabura**: epiphytic in wet forest west of Lita, alt. 700 m, Dec. 1983, *A. Hirtz 1469* (Holotype: MO); C. Luer illustr. 14919; same area, alt. 300 m, 11 Jan. 1992, *C. Luer, J. Luer, P. Jesup & A. Jesup 15579* (MO).
COLOMBIA: **Cauca**: Sta. Maria de Timbiqui, alt. 2500-3000 m, Aug. 1903, *F.C. Lehmann s.n., Ic. Pl. t. 542* (K), C. Luer illustr. 18698.

This species, known from southern Colombia and northwestern Ecuador at low altitudes, is related to the Central American *P. segoviensis*-complex as well as Colombian *P. amaliae*. It was first collected in the nineteenth century by Consul Lehmann. It is distinguished by the large, acutely uncinate, lateral lobes of the lip. The small flowers are borne successively in a strict, secund, successively several-flowered raceme that eventually surpasses the leaf by twice the length. Many of the flowers are cleistogamous. The rachis emerges from the apex of the ramicaul at the base of the leaf without a visible annulus.

Pleurothallis bifalcis Schltr., Beih. Bot. Centralbl. 36(2): 395, 1918.
Ety.: from the Latin *bifalcis*, "bifalcate," referring to the pair of lobes of the lip.

Plant medium in size to large for the subgenus, epiphytic, densely caespitose; roots slender, fasciculate. Ramicauls slender, erect, 2-8.5 cm long, enclosed by 2-3 thin, tubular sheaths. **Leaf** erect, coriaceous, narrowly obovate, subacute, subpetiolate, 7-15 cm long, 0.7-1.1 cm wide, narrowly cuneate below into the subpetiolate, conduplicate base. **Inflorescence** a subdense, secund, simultaneously several-flowered raceme 8-19 cm long including the slender peduncle 3-8 cm long, from near the apex of the ramicaul; floral bracts oblique, acute, 3-4 mm long; pedicel 3-4 mm long; ovary 3 mm long; **sepals** yellow, often yellow striped in purple along the veins, carinate, glabrous externally, long-pubescent with purple hairs within, the dorsal sepal narrowly ovate, acute, 11-14 mm long, 3-4 mm wide, 3-veined, the lateral sepals connate into an elliptical-ovate, acute, shortly bifid lamina, 11-14 mm long, 4-5 mm wide, 6-veined; **petals** translucent, yellow with the midvein and margins purple, elliptical, subacute to acute, 3-4 mm long, 1 mm wide, 1-veined; **lip** olive green, 3-lobed, 5-8 mm long, 1.5 mm wide, the anterior lobe oblong, round at the apex, smooth, suffused with brown, the lateral lobes purple, narrowly oblong, antrorse, nearly 2 mm long, the disc smooth between a pair of laminae on the middle third that extend from the bases of the lateral lobes onto the middle lobe, the base unguiculate, hinged to the column-foot; **column** green, suffused with red below the middle, semiterete, slender, 4 mm long, denticulate-winged at the apex, the anther and stigma ventral, the foot 1.5 mm long, thick with the apex of the ovary.

COSTA RICA: **Alajuela**: La Palma, 1913, *Ch. Werckle s.n.* (holotype of *P. bifalcis* destroyed at B, Lectotype here designated: AMES 23611, illustr. of type). **Cartago**: between Tablazo and San Cristóbal, *A. Endres 568* (W), C. Luer 18584; Without locality, collected by Cl. Horich, cultivated at the Botanischer Garten, München, 24 May 1980, *C. Luer 5273* (SEL).

This, the largest species of the section, is confined to Costa Rica. It is readily recognized by the large habit and considerably larger flowers. The narrowly obovate leaves are distinctly longer than those of the frequent, widely distributed and variable *P. segoviensis*. The loose, secund racemes are also usually longer with larger flowers, at least twice the dimensions of those of *P. segoviensis*. The morphology of the flowers is very similar. The lip is about as large as the flowers of some variations of *P. segoviensis*. The labellar lobes are narrowly oblong and antrorse.

Pleurothallis canae Ames, Sched. Orchid. 2: 18, 1923.
Ety.: Named for the Panamanian community of Cana, near where the species was collected.

Plant medium to large in size for the section, epiphytic, caespitose; roots slender, fasciculate. Ramicauls slender, erect, 1.5-4.5 cm long, enclosed by 2-3 thin, tubular sheaths. **Leaf** erect, coriaceous, narrowly elliptical-obovate, obtuse to rounded at the apex, 5-14 cm long, 1-1.5 cm wide, narrowly cuneate below into the subpetiolate base. **Inflorescence** a loose, secund, successively several-flowered raceme, 9-25 cm long including the slender peduncle 4-5 cm long, from near the apex of the ramicaul; floral bracts oblique, acute, acuminate, 5 mm long; pedicel curved, 5-7 mm long; ovary 2.5 mm long;

sepals green, suffused with purple, especially along the veins, carinate, glabrous externally, densely long-purple-pubescent within, the dorsal sepal narrowly ovate, acute, 7-12 mm long, 3 mm wide, 3-veined, the lateral sepals connate into an elliptical-ovate, acute, shortly bifid lamina, 8-12 mm long, 4 mm wide, 6-veined; **petals** translucent, marked with purple, elliptical-oblong, obtuse, apiculate, 2.5 mm long, 1.75 mm wide, 1-veined; **lip** yellow, suffused with purple above the middle, 3-lobed, 3.5-4 mm long, 2 mm wide across the basal lobes, the anterior lobe oblong, round at the apex, microscopically denticulate, the basal lobes erect, short, broadly truncate, 1.25 mm broad, with the anterior angle prolonged, with the margins dark purple, the disc with a longitudinal pair of dark purple laminae on the middle third that extend from the bases of the lobes to near the apex, and with a pair of adjacent laminae at the base, sulcate between, the base hinged to the column-foot; **column** purple, semiterete, 3.5 mm long, denticulate-erose at the apex, the anther and stigma ventral, the foot 1.5 mm long, thick with the apex of the ovary.

PANAMA: **Darién**: Cana and vicinity, alt. 6,000 ft., 27 Apr. 1908, *R.S. Williams 971* (Holotype: AMES; Isotype: NY); Serrania de Pirre, between Altos de Nique and Cerro Pirre, alt. 1450 m, 27 July 1976, *T.B. Croat 37832* (MO). **Veraguas**: between Santa Fe and Río Calovebora, alt. 735 m, 1976, *T.B. Croat & J.P. Folsom 34276* (MO); same area, 5 Sept. 1976, *C. Luer & R. Dressler 1298* (SEL).
COSTA RICA: Without locality, 1 Feb. 1958, cultivated at K, received from *C.H. Lankester s.n.* (K).

This species is apparently endemic in central and eastern Panama. It is characterized by the comparatively large habit with a several-flowered, secund raceme that eventually exceeds the leaf in length. The purple flowers are similar to those forms grouped in *P. segoviensis*. The sepals are acute and covered within by a long, purple pubescence. The petals are small, obtuse and apiculate. The lip is distinguished by the erect, short, broadly truncate, basal lobes with the anterior corner slightly prolonged. A longitudinal pair of lamellae proceed forward from the lobes along the middle of the disc and terminate abruptly before the rounded apex. A small pair of lamellae are present at the base.

Pleurothallis kareniae Luer, Lindleyana 11: 83, 1996.
Ety.: Named in honor of Karen Ingram-Ferrell, co-discoverer of this species.

Plant medium in size, epiphytic, densely caespitose; roots slender, fasciculate. Ramicauls slender, erect, 1-2 cm long, enclosed by 2-3 thin, tubular sheaths. **Leaf** erect, coriaceous, obovate, obtuse to rounded at the apex, subpetiolate, 4-7 cm long, 1.1-1.6 cm wide, cuneate below into the conduplicate base. **Inflorescence** a loose, distichous, flexuous, successively several-flowered raceme up to 15 cm long including the slender peduncle 8-10 cm long, from near the apex of the ramicaul; floral bracts oblique, acute, 3-3.5 mm long; pedicel 3-4 mm long; ovary 1.5 mm long; **sepals** green, lightly suffused with red, fleshy, glabrous, carinate, the dorsal sepal elliptical, acute, concave, 6.5 mm long, 2.5 mm wide expanded, 3-veined, the lateral sepals suffused with red down the center, connate into an ovate, acute, shortly bifid lamina, 7 mm long, 2.5 mm wide, 6-veined; **petals** translucent, oblong-ovate, subacute, 2.75 mm long, 1 mm wide, 1-veined; **lip** dark red, with the central cavity pale green, 3-lobed, 3 mm long, 1 mm wide, the anterior lobe oblong with the apex rounded, the lateral lobes erect, occupying the basal third of the lip, broadly uncinate with a short, acute, antrorse apex, the disc deeply channeled between a pair of longitudinal calli, the base hinged to the column-foot; **column** semiterete, 2.5 mm long, denticulate-winged at the apex, the anther and stigma ventral, the foot thick with the apex of the ovary.

COSTA RICA: **Limón**: Parqué Nacional Braulio Carrillo, Canton de Pococí, southeast of Carrillo Station, alt. 700-780 m, 15 Nov. 1990, *S. Ingram & K. Ferrell 705* (Holotype: CR; Isotype: SEL), C. Luer illustr. 16508.

This species is similar to the other members of the section, but it is distinguished from them by the elongated, flexuous, successively flowered raceme, similar to that of many forms of *P. segoviensis*, surpassing the obtuse leaves by twice their length; the average-sized flowers that are glabrous and carinate; and a three-lobed lip that is longitudinally and deeply channeled between a pair of carinae. The lobes are erect and broadly uncinate, occupying the lower third of the lip.

Pleurothallis pilostoma Luer, Lindleyana 11: 89, 1996.

Ety.: From the Greek *pilostoma*, "hairy mouth," referring to the long-pubescent sepals.

Plant medium in size to large for the section, epiphytic, caespitose; roots slender, fasciculate. Ramicauls slender, erect, 2.5-6 cm long, enclosed by 2-3 thin, tubular sheaths. **Leaf** erect, coriaceous, narrowly obovate, obtuse, 6-15 cm long, 1-1.5 cm wide, narrowly cuneate below into the subpetiolate base. **Inflorescence** a loose, secund, simultaneously several-flowered raceme 8-18 cm long including the slender peduncle 5-6 cm long, from near the apex of the ramicaul; floral bracts oblique, acute, long-acuminate, 4-5 mm long; pedicel 5 mm long; ovary 3 mm long; **sepals** red-purple with yellow-green along keels, tall-carinate, apiculate, glabrous externally, densely long-pubescent within on the outer thirds, the dorsal sepal elliptical-oblong, acute, 7.5-9 mm long, 3.25-3.5 mm wide, 3-veined, the lateral sepals connate into a broadly elliptical, concave, shortly bifid lamina, 8-9 mm long, 5.5-6 mm wide, 4-veined, with short, acute apices; **petals** suffused with purple, elliptical-oblong, subacute, 3.5 mm long, 1.75 mm wide, 1-veined; **lip** red, oblong-trilobed, 4 mm long, 2 mm wide, the anterior lobe oblong with the apex broadly rounded, the basal lobes erect, occupying the basal third of the lip, broadly cuneate-truncate, the disc with a pair of erect, longitudinal lamellae on the middle third, the base with a tall pair of adjacent calli, hinged to the column-foot; **column** purple, semiterete, 3.5 mm long, with the apex dilated, truncate, denticulate-erose, the anther and stigma ventral, the foot thick, 1.5 mm long.

COSTA RICA: **Puntarenas**: Monteverde upper community, alt. 1450-1500 m, 7 Dec. 1989, *J. T. Atwood & W. Morris 4087* (Holotype: SEL; Isotype: MO), C. Luer illustr. 17060. **Alajuela**: San Ramón, alt. 4,000 ft., ca. 1867, *A. Endres 24, 66* (illustr. at W). **Guanacaste**: northeast of Tilarán, alt. 850 m, 4 Dec. 1963, *A. Jiménez M. 1345* (CR); Monteverde, north of Las Nubes, Atlantic slope, alt. 1300 m, 19 Jan. 1989, *W. Haber & W. Zuchowski 8978* (CR, MO), C. Luer illustr. 16527. **Heredia**: Barba, *A. Endres 77, 244* (W).

This species is apparently endemic in the forests around the Monteverde Reserve. It is characterized by a relatively large habit compared to the common, sympatric *P. segoviensis*. Similar in habit to both *P. canae* and *P. pompalis*, the long, narrowly obovate leaves are eventually surpassed by the inflorescence. The sepals of all three species are densely long-pubescent within, but the synsepals of *P. canae* and *P. pompalis* are narrow and convex, while the synsepal of *P. pilostoma* is broad and concave. The sepals are tall-carinate along the midveins that end in projecting apicula. The lip of *P. canae* is very similar with broad, short lobes, while the lobes of *P. pompalis* small and longer than broad.

Pleurothallis pompalis Ames, Sched. Orchid. 7: 23, 1924.

Ety.: From the Latin *pompalis*, "pompous, like a parade," referring to the inflorescence.

Plant large for the section, epiphytic, caespitose; roots slender, fasciculate. Ramicauls slender, erect, 2-4.5 cm long, enclosed by 2-3 thin, tubular sheaths. **Leaf** erect, coriaceous, narrowly elliptical, narrowly obtuse to subacute at the apex, petiolate, 6-18 cm long including the petiole 2-5 cm long, 1-2.2 cm wide, narrowly cuneate below into the petiole. **Inflorescence** a loose, secund, simultaneously several-flowered raceme, 17-23 cm long including the slender peduncle 8-13 cm long, from near the apex of the ramicaul; floral bracts oblique, acute, 4-5 mm long; pedicel 5 mm long; ovary 3 mm long; **sepals** dark red-purple, glabrous externally, long-pubescent within, the dorsal sepal narrowly ovate, acute, 8-14 mm long, 3-3.75 mm wide, 3-veined, the lateral sepals connate into a narrowly ovate, acute, shortly bifid lamina, 9-12 mm long, 3.5-4.25 mm wide, 6-veined; **petals** translucent, marked with purple, elliptical, obtuse, 2 mm long, 1.5 mm wide, 1-veined; **lip** purple, 3-lobed, 3.5 mm long, 2 mm wide across the basal lobes, the anterior lobe oblong, round at the apex, the basal lobes erect, narrowly wing-like, truncate with the anterior angle slightly prolonged, 0.6 mm long, the disc flat in the middle third between a pair of laminae on the middle third that extend from the bases of the lobes onto the middle lobe, and with a pair of adjacent laminae at the base, the base hinged to the column-foot; **column** purplish, semiterete, 3 mm long, denticulate at the apex, the anther and stigma ventral, the foot 1 mm long, thick with the apex of the ovary.

COSTA RICA: **San José**: Carpintera, alt. 5,500 ft., 4 Sept. 1923, *C. H. Lankester 512* (Holotype: AMES). **Heredia**: slopes of Volcán Barba, *A. Endres s.n.* (W); without locality, 15 Oct. 1932, *A. M. Brenes s.n.* (NY). **Puntarenas**: east of Santa Elena de Monteverde, alt. 1500 m, 6 Aug. 1988, *J. T. Atwood & W. Haber 88-57* (SEL); Monteverde community, alt. 1600 m, 5 Aug. 1990, *J. Atwood, S. Ingram & K. Ferrell 4124* (CR); Monteverde Reserve, alt. 1500 m, 4 Nov. 1992, *S. Ingram & K. Ferrell 1650* (SEL), C. Luer illustr. 17063.
PANAMA: **Chiriquí**: Cerro Homito, Dec. 1976, *C. Luer, A. Luer, R. Dressler, N. Williams 1387* (SEL).

Vegetatively, this species is one of the largest of the section. It occurs locally frequently in Costa Rica and western Panama. *Pleurothallis pompalis* is characterized by the comparatively large habit with narrowly elliptical, petiolate leaves and a long, secund inflorescence of flowers, several of which are open simultaneously. The dark purple flowers are long-pubescent within. The obtuse petals and lip are small. Most characteristic are the small, erect, subquadrate, basal lobes of the lip. The anterior corner of the truncate apex is slightly prolonged. A prominent pair of lamellae occupy the middle third of the lip, and a small pair of adjacent lamellae are present at the base.

Pleurothallis psilantha Luer, sp. nov.

Ety.: From the Greek *psilanthos*, "a bare flower," referring to the hairless sepals.

Inter species subgeneris *Unciferiae*, habitu parvo, racemo secundo plurifloro foliis anguste obovatis obtusis longiore, sepalis carnosis carinatis subacutis glabris, petalis oblongis obtusis, et labelli lobis basalibus uncinatis cum disco supra medium bicalloso sed ad basim plano.

Plant small, epiphytic, densely caespitose; roots slender, fasciculate. Ramicauls slender, erect, 6-10 mm long, enclosed by 2-3 thin, tubular sheaths. **Leaf** erect, coriaceous, obovate, obtuse to rounded at the apex, subpetiolate, 3-5 cm long, 0.7-0.8 cm wide, cuneate below into the conduplicate base. **Inflorescence** a subdense, secund, simultaneously several-flowered raceme 4-10 cm long including the slender peduncle 3-4.5 cm long, from near the apex of the ramicaul; floral bracts oblique, acute, 3 mm long; pedicel 3 mm long; ovary 2 mm long; **sepals** translucent yellow, glabrous, thickly carinate, microscopically apiculate, the dorsal sepal ovate, acute, concave, 6 mm long, 2 mm wide expanded, 3-veined, the lateral sepals connate above the middle into an ovate, bifid lamina, 5.5 mm long, 3 mm wide, 6-veined; **petals** translucent, dark red, oblong-obovate, subacute, 2.5 mm long, 1 mm wide, 1-veined; **lip** dark red, 3-lobed, 3 mm long, 1 mm wide, the anterior lobe oblong with the apex rounded, the lateral lobes erect, below the middle, narrowly uncinate, antrorse, acute, the disc with a pair of calli on the middle third, extending from the bases of the lateral lobes onto the anterior lobe, the base thickened, smooth, truncate, hinged to the column-foot; **column** semiterete, 3 mm long, denticulate-winged at the apex, the anther and stigma ventral, the foot thick with the apex of the ovary.

COSTA RICA: **Heredia**: Canton de Barva, northwest of Porrosatí, epiphytic, alt. 2000 m, 11 Nov. 1990, *S. Ingram & K. Ferrell 714* (Holotype: CR; Isotypes: MO, SEL), C. Luer illustr. 16552. **Guanacaste**: near Candelaria, alt. 1100 m, 29 June 1989, *J. T. Atwood 89-248* (SEL).

Vegetatively, this species is smaller than the usual *P. segoviensis*. It is distinguished from the numerous variations of the latter by the short, secund, simultaneously flowered raceme barely borne beyond the tips of the leaves by a slender peduncle; the average-sized flowers that are totally glabrous; sepals that are thickly carinate; and a three-lobed lip with narrow, acute, uncinate lateral lobes. A pair of carinae extend forward from the lobes onto the disc, and the surface of the disc below the middle is slightly thickened and smooth, devoid of any callus or channel.

Pleurothallis segoviensis Rchb.f., Bonplandia 3: 223, 1855.

Ety.: Named for the Costa Rican community of Segovia near where the species was collected.

Syn.: *Humboldtia segoviensis* (Rchb.f.) Kuntze, Rev. Gen. Pl. 2: 668, 1891.

Syn.: *Pleurothallis wercklei* Schltr., Repert. Spec. Nov. Regni Veg. 9: 213, 1911.
Ety.: Named in honor of C. Wercklé who discovered this species.

Syn.: *Pleurothallis johannis* Schltr., Repert. Spec. Nov. Regni Veg. 17: 140, 1921.
Ety.: Named in honor of the collector, Hans von Türckheim.

Syn.: *Pleurothallis melicoides* Schltr., Repert. Spec. Nov. Regni Veg. Beih. 19: 24, 1923.
Ety.: From the Greek *melicoides*, "bee-like," referring to the fancied appearance of the flowers.

Syn.: *Pleurothallis amethystina* Ames, Sched. Orchid. 4: 14, 1923.
Ety.: From the Latin *amethystinus*, "amethyst-colored," referring to the flowers.

Syn.: *Pleurothallis vinacea* Ames, Sched. Orchid. 6: 69, 1923.
Ety.: From the Latin *vinaceus*, "wine-colored," referring to the flowers.

Plant small to medium in size, epiphytic, caespitose; roots slender, fasciculate. Ramicauls slender, erect, 1-4 cm long, enclosed by 2-3 thin, tubular sheaths. **Leaf** erect, coriaceous, narrowly elliptical to narrowly elliptical-obovate, obtuse to narrowly obtuse at the apex, 3-12 cm long, 0.5-1.2 cm wide, narrowly cuneate below into the subpetiolate base. **Inflorescence** a loose, secund, strict to flexuous, simultaneously several- to many-flowered raceme, 5-20 cm long including the peduncle 3-6 cm long, from near the apex of the ramicaul; floral bracts oblique, acute, 2-4 mm long; pedicel 2-4 mm long; ovary 1.5-2.5 mm long; **sepals** shades of green, yellow, brown or purple, glabrous externally, variously pubescent within, the dorsal sepal narrowly ovate, acute, 4-8 mm long, 1.5-2.5 mm wide, 3-veined, the lateral sepals connate into a narrowly elliptical or narrowly ovate, acute, shortly bifid lamina, 4-8 mm long, 2.5-4 mm wide, 6-veined; **petals** translucent, variously suffused with purple, elliptical, acute to subacute, 2.5-3.5 mm long, 1-1.5 mm wide, 1-veined; **lip** usually purple, 3-lobed, 2-4 mm long, 1-2.5 mm wide across the basal lobes, the anterior lobe oblong, obtuse to round at the apex, the basal lobes prominent, erect, falcate, antrorse, narrowly obtuse to acute, the disc with a pair of calli on the middle third that extend from the bases of the lobes onto the middle lobe, and with a lesser pair of adjacent calli at the base, the base hinged to the column-foot; **column** red or purple, semiterete, 2-4 mm long, denticulate at the apex, the anther and stigma ventral, the foot 1 mm long, thick with the apex of the ovary.

NICARAGUA: **Nueva Segovia**: Segovia, Jan. 1848, *Oersted 7314* (Holotype: C; Isotype: AMES); Segovia, *Oersted 227* (W). **Jinotega**: between Matagalpa and Jinotega, alt. 1200-1400 m, *Moreno 594* (F, MO); between San Ramón and Finca Bavaria, *A. Heller 1963* (F).
EL SALVADOR: Rocas del Cayaguanca, alt. 1500 m, *F. Hamer 166*.
COSTA RICA: **Cartago**: between Tablazo and San Cristóbal, *A. Endres 89, 284, 307, 505* (W). Without locality, obtained from K. Schumann, 1903, collected by *Ch. Wercklé s.n.* (holotype destroyed at B, lectotype of *P. wercklei* here designated: AMES 23689, illustr. of type); above San Cristóbal Norte, alt. 1680 m, 26 Mar. 1995, *C. Luer, J. Luer, J. Atwood et al. 17479* (MO); San Vicente de Ciudad Casada, alt. 1850 m, cult. at Lankester Garden, Cartago, 7 Mar. 1995, *C. Luer 17370* (MO). **Alajuela**: La Palma, May 1921, *C. Wercklé 44* (holotype of *P. melicoides* destroyed at B; lectotype here designated: AMES s.n., left half of sheet); Rincón de La Vieja, alt. 800 m, 27 June 1981, *C. Luer & J. Luer 6418* (SEL). **Puntarenas**: Monteverde Preserve, alt. 1500 m, 18 Mar. 1986, *C. Luer, J. Luer & D. Dod 12100* (MO); in pastures south of Monteverde Preserve, alt. 1400 m, 14 Mar, 1989, *J.T. Atwood 89-73* (SEL). **San José**: Without locality, cult. at Kew, 24 July, 1923, *C.H. Lankester s.n.* (holotype of *P. vinacea*: AMES; isotype: K), C. Luer illustr. 18575; Carpintera, Tarbuca, flowered in cultivation at Lankester Gardens, Cartago, 7 Mar. 1995, *C. Luer 17372* (MO). Without locality, ca. 1867, *A. Endres 89, sketch 173* (W).
GUATEMALA: **Alta Verapaz**: Pansamalá, alt. 3,800 ft., Oct. 1885, *H. v. Türckheim 801* (holotype of *P. johannis* destroyed at B; lectotype here designated: AMES 22136; isolectotypes: BR, K, NY, W); Cobán, alt. 4,500 ft., June 1878, *H. von Türckheim 117* (W); near Cobán, alt. 1350 m, Dec. 1907, *H. von Türckheim II 1839* (BR, W); Cobán, alt. 1550 m, Nov. 1912, *H. von Türckheim 3997* (AMES, W); Cobán, collected by O. Mittelstaedt, cult. Feb. 1990, *C. Luer 14613, 14614, 14868* (MO); Samác, alt. 4,000 ft., 20 Oct. 1920, *H. Johnson 878* (holotype of *P. amethystina*: AMES); Carchá, collected by M. Dix, cult. 21 Feb. 1981, *C. Luer 5853* (SEL); Purulhá, collected by M. Dix, cult. 21 Feb. 1981, *C. Luer 5854* (SEL). **Baja Verapaz**: above Purula, Cerro Verde, alt. 1700 m, *F.C. Lehmann 1352* (BR).
PANAMA: **Bocas del Toro**: between Fortuna and Chiriquí Grande, alt. 350 m, 17 Feb. 1985, *C. Luer, J. Luer, R. Dressler & K. Dressler 10604* (MO). **Chiriquí**: alt. 5,000 ft., Mar. 1923, *C.W. Powell 279* (K); Cerro Horrito, Dec. 1976, *C. Luer, A. Luer, R. Dressler, N. Williams et al., 1387* (SEL); above Boquete, alt. 1400 m, 14 Feb. 1985, *C. Luer, J. Luer, R. Dressler & K. Dressler 10528* (MO). **Panamá**: Cerro Campana, collected by F L Stevenson, 17 June 1975, *C. Luer 045* (SEL).

First found in Nicaragua by Oersted, this common species is variable and widely distributed in Central America from Guatemala to central Panama. Several of the numerous forms have been described as species, and the criteria used to define them are found in varying proportions among the populations.

Vegetatively, this species is recognized by the densely caespitose, narrowly elliptical to obovate leaves borne by abbreviated ramicauls. The inflorescence originates near the apex of the ramicaul and exceeds the leaf in length, sometimes thrice the length. The flowers vary in size, and they are borne more or less simultaneously, or several at a time successively. The rachis varies from slightly flexuous to strict. Combinations in color of the floral parts that vary from green, yellow, orange, brown or purple are found throughout the range. The membranous sepals are variously pubescent within, sometimes totally hairless. The petals are elliptical to oblong, more or less acute, about as long as the column. The lip is trilobed with the midlobe oblong and obtuse, and with prominent, uncinate, basal lobes. A pair of lamellae occupies the middle third of the lip, and at the base the surface varies from smooth to shallowly sulcate.

Pleurothallis wagneri Schltr., Repert. Spec. Nov. Regni Veg. 17: 141, 30 June 1921.

Ety.: Named in honor of Dr. Moritz Wagner who discovered this species.

Syn.: *Pleurothallis falcatiloba* Ames, Proc. Biol. Soc. Wash. 34: 152, 21 Dec. 1921.
Ety.: from the Latin *falcatilobus*, "falcate-lobed," referring to the pair of lobes of the lip.

Syn.: *Pleurothallis aguilarii* Ames, Sched. Orchid. 9: 28, 1925.
Ety.: Named in honor of the collector, Ramiro Aguilar.

Plant small to medium in size for the section, epiphytic, caespitose; roots slender, fasciculate. Ramicauls slender, erect, 0.5-1.5 cm long, enclosed by 2-3 thin, tubular sheaths. **Leaf** erect, coriaceous, narrowly obovate, obtuse to rounded at the apex, subpetiolate, 2.5-9 cm long, 1-1.6 cm wide, narrowly cuneate below into the conduplicate, subpetiolate base. **Inflorescence** a subdense, secund, simultaneously several-flowered raceme, 6-10 cm long including the slender peduncle 4-6 cm long, from near the apex of the ramicaul; floral bracts oblique, acute, 3-4 mm long; pedicel 3.5-5 mm long; ovary 2-3 mm long; **sepals** dark purple to dark brown, glabrous externally, white-pubescent within, the dorsal sepal narrowly elliptical-ovate, acute, 9-16 mm long, 3-4 mm wide, 3-veined, the lateral sepals connate into an elliptical-ovate, acute, shortly bifid lamina, 9-15 mm long, 5-7 mm wide, 6-veined; **petals** translucent yellow-brown, with the midvein darker brown, elliptical, obtuse, 2-3 mm long, 1.5-1.8 mm wide, 1-veined; **lip** purple or purple-brown, occasionally microscopically pubescent, 3-lobed, 3-4 mm long, 3 mm wide across the basal lobes, the anterior lobe oblong, round at the apex, the lateral lobes uncinate, broad at the base, acute at the apex, antrorse, nearly 2 mm long, the disc sulcate between a pair of laminae on the middle third that extend from the bases of the lobes onto the middle lobe, the base broadly unguiculate, smooth, hinged to the column-foot; **column** purple, semiterete, 3.5 mm long, denticulate at the apex, the anther and stigma ventral, the foot 1.5 mm long, thick with the apex of the ovary.

PANAMA: **Chiriquí**: without more specific locality, Apr. 1858, *M. Wagner 25* (Holotype of *P. wagneri* destroyed at B, Lectotype here designated: AMES 26762, illustr. of type); Valley of the Río Quebrada, alt. 1700 m, 2 Aug. 1918, *E.P. Killip 3540* (holotype of *P. falcatiloba*: AMES); Cerro Hornito, Dec. 1976, *C. Luer, A. Luer, R. Dressler, N. Williams et al., 2789* (SEL). **Coclé**: El Valle, collected and cultivated by Lupe Dreyfus, 10 Feb. 1985, *C. Luer 10513* (MO).
COSTA RICA: **Heredia**: Volcán de Barba, 3 Feb. 1924, collected by R. Aguilar, *P.C. Standley 33157* (holotype of *P. aguilarii*: AMES). **San José**: Casa Mate, cult. at Lankester Garden, Cartago, 7 Mar. 1995, *C. Luer 17374* (MO). Without collection data, cultivated at Lancaster Gardens, Cartago, 18 Mar. 1986, *C. Luer 12084* (MO).
COLOMBIA: Without collection data, cultivated at Colomborquídeas, photograph *Native Colombian Orchids* 3: 432, B-509.

This species was described twice independently in 1921 by rivals Ames and Schlechter from different collections in the province of Chiriquí, Panama, Schlechter's description predating that of Ames by six months. The species is now known to occur from central Costa Rica to central Panama.

Pleurothallis wagneri is characterized by the comparatively small habit with narrowly obovate leaves and a congested, secund inflorescence that surpasses them. The raceme consists of the one-sided row of several, simultaneous, long, fleshy, dark purple or purple-brown flowers that do not open widely. The sepals are covered within by a usually white pubescence. The petals are proportionately small. The lobes of the lip are large and prominently falcate.

The type of *P. falcatiloba* Ames is without flowers. There is a collection without collection data, but with an illustration in Reichenbach's herbarium at W with the intended name *P. pendulina*.

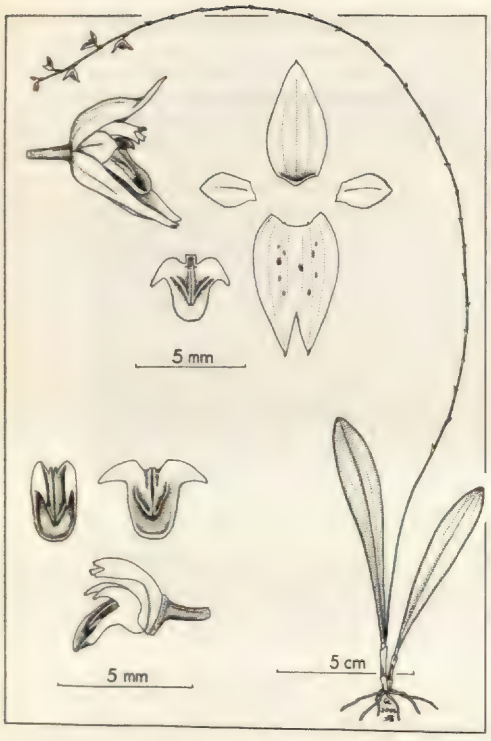


Fig. 1. Pleurothallis amaliae

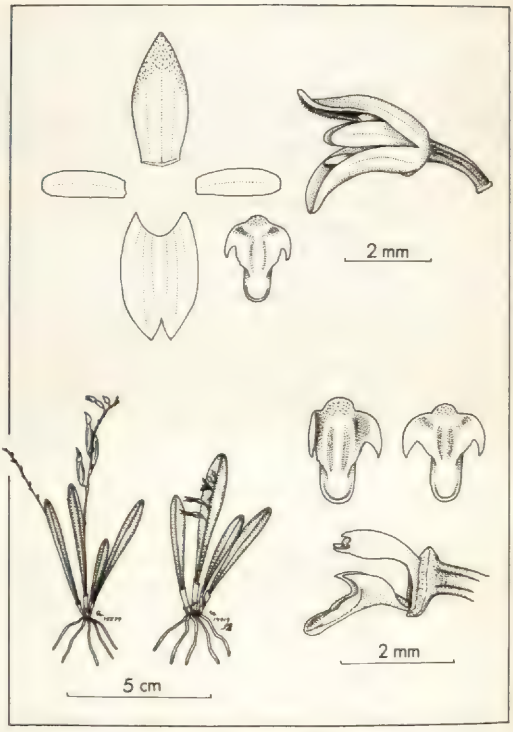


Fig. 2. Pleurothallis ancistra

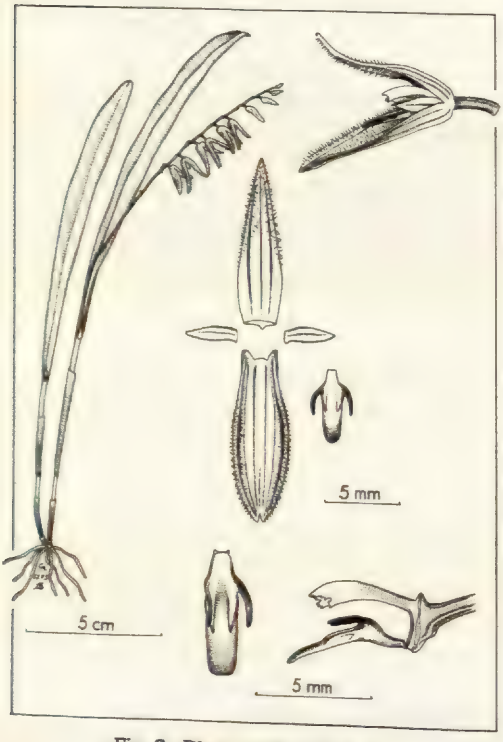


Fig. 3. Pleurothallis bifalcis

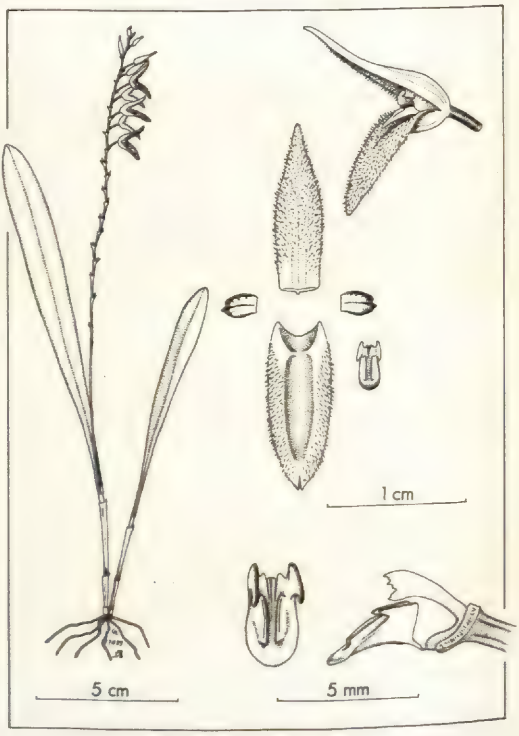


Fig. 4. Pleurothallis canae

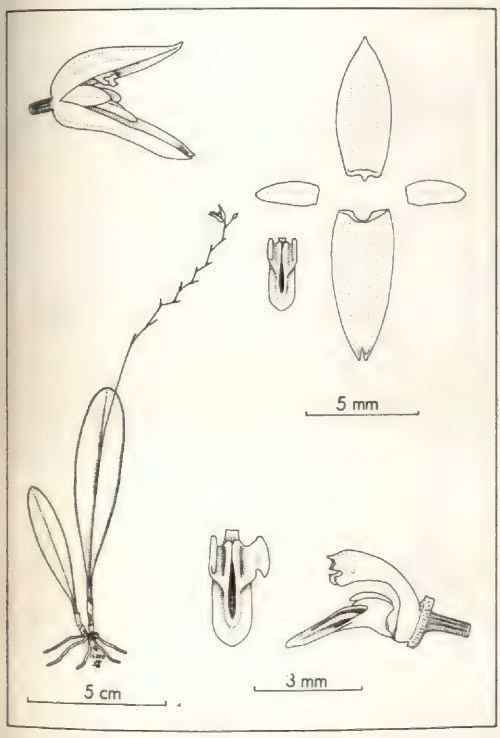


Fig. 5. Pleurothallis kareniae

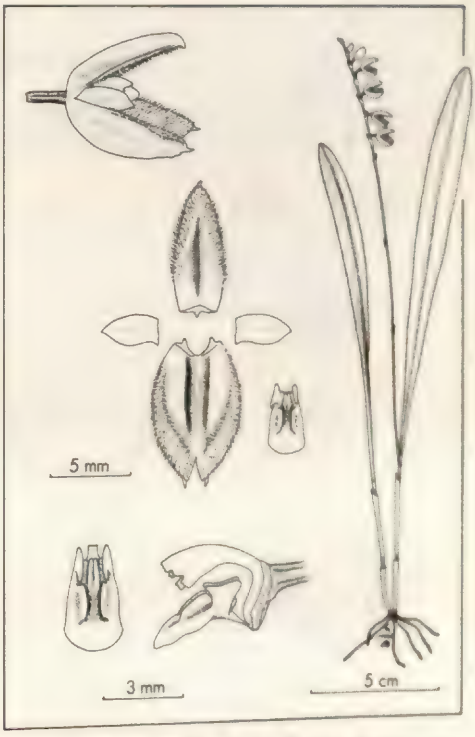


Fig. 6. Pleurothallis pilostoma

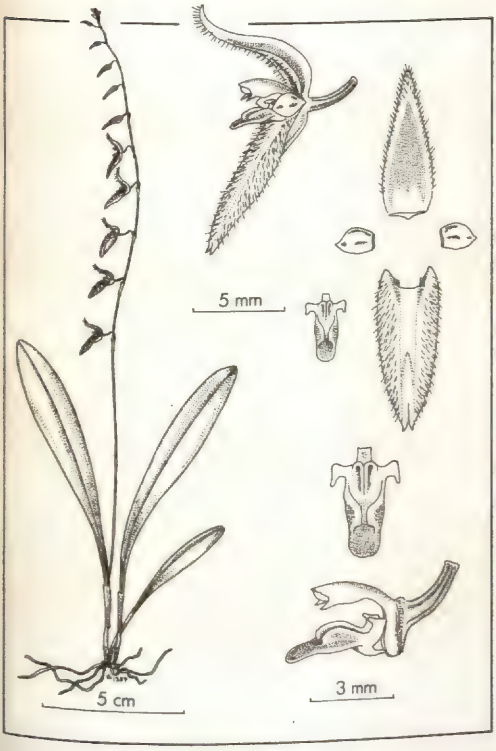


Fig. 7. Pleurothallis pompalis

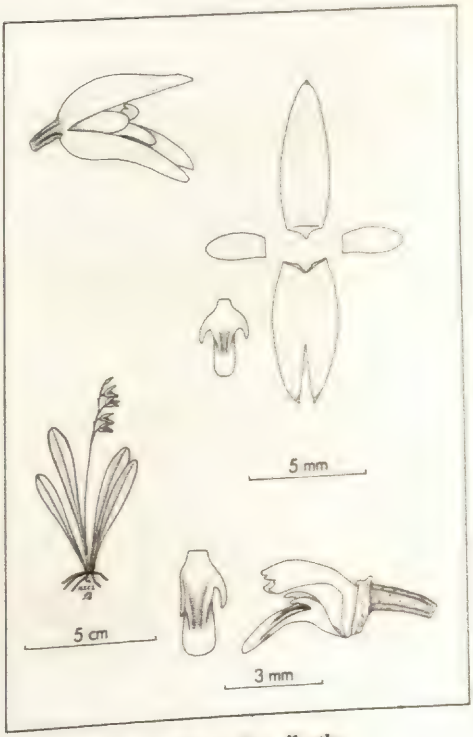


Fig. 8. Pleurothallis psilantha

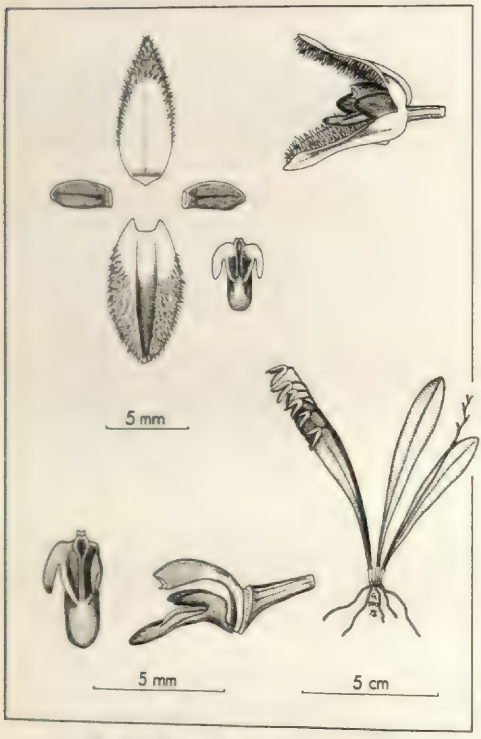


Fig. 9. Pleurothallis segoviensis

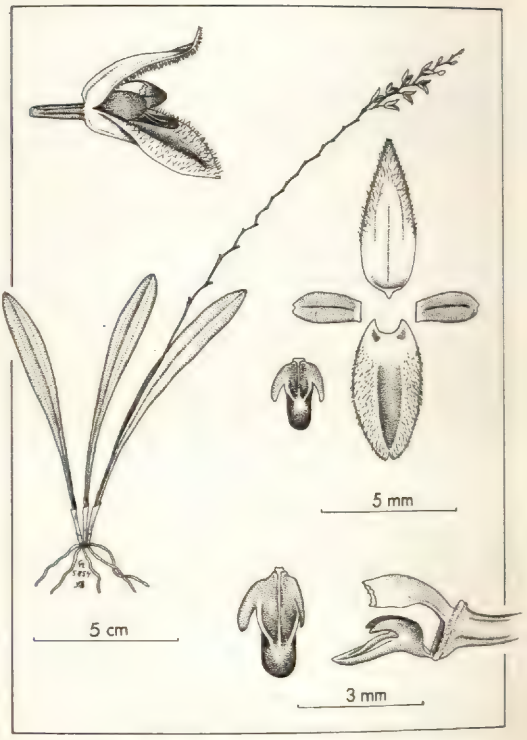


Fig. 10. Pleurothallis segoviensis

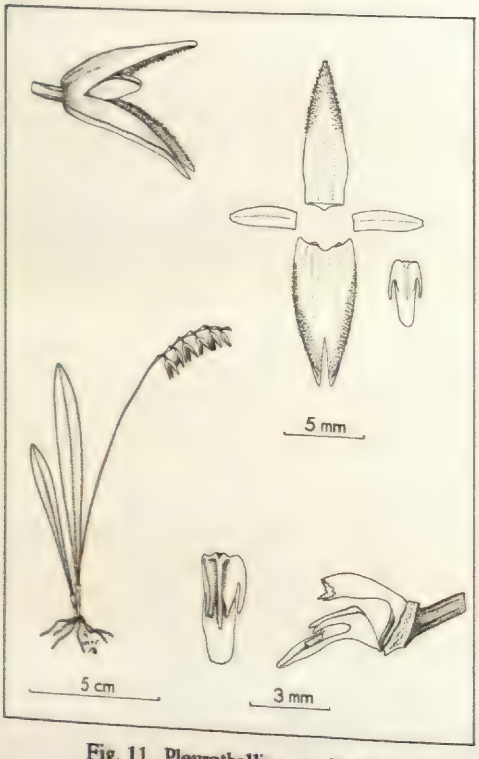
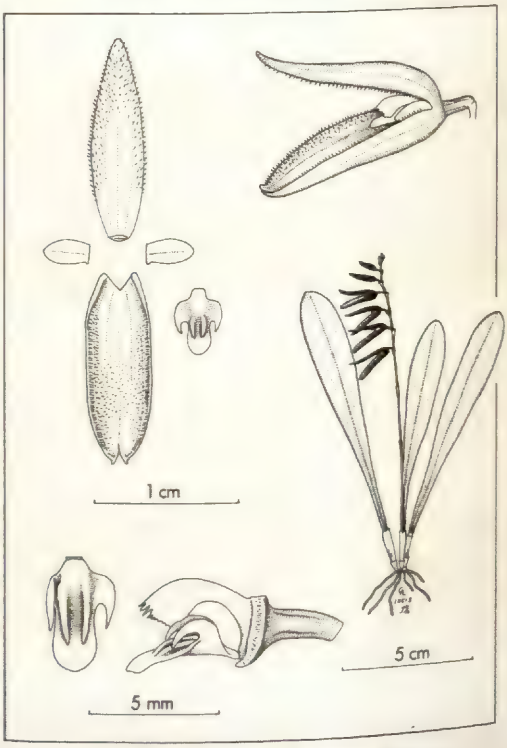


Fig. 11. Pleurothallis segoviensis



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ADDENDA TO *DRACULA, LEPANTHES, MASDEVALLIA, PORROGLOSSUM* AND *SCAPHOSEPALUM*

ABSTRACT

New species of *Dracula* Luer, *Lepanthes* Sw., *Masdevallia* Ruiz & Pav., *Porroglossum* Schltr. and *Scaphosepalum* Pfitz. are described. The illustrations of *Dracula* and *Lepanthes* are numbered plate and figures (four illustrations per page) as continuations of their respective appearances in *Icones*, while the illustrations of the remaining species, now as four figures per page, are numbered irrespectively of the previous treatment to the genus.

New taxa:
Dracula adrianae Luer, sp. nov.
Lepanthes ariasiana Luer & Jost, sp. nov.
Lepanthes mendozae Luer & D'Alessandro, sp. nov.
Lepanthes mooreana Luer & Jost, sp. nov.
Lepanthes mulleriana Luer, sp. nov.
Lepanthes serialina Luer & Jost, sp. nov.
Lepanthes viebrockiana Luer & Jost, sp. nov.
Masdevallia adrianae Luer, sp. nov.
Masdevallia maduroi Luer, sp. nov.
Masdevallia monicana Luer, sp. nov.
Masdevallia newmaniana Luer & Teague, sp. nov.
Masdevallia obscurans Luer, stat. nov.
Masdevallia oscitans Luer, stat. nov.
Masdevallia polychroma Luer, sp. nov.
Masdevallia robusta Luer, sp. nov.
Masdevallia schizostigma Luer, sp. nov.
Porroglossum tripollex Luer, sp. nov.
Scaphosepalum cloesii Luer, sp. nov.
Scaphosepalum globosum Luer & Hirtz, sp. nov.
Scaphosepalum jostii Luer, sp. nov.
Scaphosepalum martineae Luer, sp. nov.

Dracula adrianae Luer, sp. nov.

Ety.: Named in honor of Adriana, wife of Antonius (Ton) P. Sijm of Venhuizen, The Netherlands, who cultivates this species.

Planta parva, pedunculo erecto unifloro (semper?), sepalis albis in cupulam latam profunde connatis intus breviter pubescentibus, labelli epichilio hypochilio minore alte carinato, hypochilio profunde excavato distinguitur.

Plant small, presumably epiphytic, caespitose; roots slender. Ramicauls erect, slender, 2-2.5 cm long, enclosed by 2-3 loose, tubular sheaths. **Leaf** erect, thinly coriaceous, carinate, narrowly obovate, acute, 7-12 cm long including the petiole, 0.8-1.5 cm wide, gradually narrowed below into an indistinct, conduplicate petiole 2-2.5 cm long. **Inflorescence** a single flower, probably followed by another, borne by an erect peduncle, 7-8 cm long, from low on the ramicaul; floral bract tubular, 7 mm long; pedicel 12 mm long; ovary 7 mm long, round in cross section; **sepals** white, suffused with brown within at the base, diffusely short-pubescent within, the dorsal sepal transversely obovate, 7 mm long, 9 mm wide, connate to the lateral sepals for 5 mm to form a broad, deep, sepaline cup, the apex rounded, abruptly contracted into a comparatively thick, red-brown tail 13 mm long, the lateral sepals broadly ovate, oblique, 9 mm long, 9 mm wide, connate 6.5 mm into a broad, rounded mentum, the apices broadly obtuse, contracted into tails 12 mm long, similar to that of the dorsal sepal; **petals** cream, marked with dark brown, cartilaginous, oblong, 4 mm long, 1.5 mm wide, the apex bivalvate, densely papillose between the laminae, the inner lamina subacute, denticulate, the outer lamina rounded; **lip** white, thickly pandurate, 8 mm long, 6 mm wide, the epichile transversely reniform, 3 mm long, 5 mm wide, with the outer halves lightly rugose, shallowly concave to either side of a tall, central, central carina, the hypochile ovoid, 5 mm long, 6 mm wide, deeply and broadly cleft centrally, with thickened margins continuous from the carina, the margins broadly rounded, the base decurved, concave, hinged to the column-foot; **column** white, stout, semiterete, 5 mm long, denticulate at the tip, with a stout foot 3-4 mm long.

COLOMBIA: Without collection data, obtained from Hubein, professional importer, cultivated at Orchideeënkwerkerij, Venhuizen, The Netherlands, August 1998, by *Ton Sijm 20898* (Holotype: MO), C. Luer illust. 18879.

In the key to the species of *Dracula* (*Icones Pleurothallidinarum*-10), this species keys out to *D. delassandroi* Luer, from which it differs markedly. *Dracula adrianae* is distinguished by a small habit and a small, white, deeply cupped flower borne by an erect peduncle nearly as long as the leaf. Within, the sepals are shortly pubescent, and the tails are short and thick. The petals and lip are proportionately large, mostly filling the sepaline cup. The deeply and broadly cleft hypochile is larger than the epichile with a tall, central keel.

The following four species of subgenus *Lepanthes* raise the number of species for the subgenus in Ecuador to 279, and the two species of subgenus *Brachycladium*, raise the total number of species of the genus known in Ecuador to 292.

Lepanthes ariasiana Luer & Jost, sp. nov.

Ety.: Named in memory of the late Diego Arias, local collector and founder of the Llanganetes Foundation.

Inter species subgeneris *Brachycladii* habitu perparvo, pedunculo brevissimo, sepalo dorsali convexo, sepalis lateralibus triangularibus late divergentibus, petalis transverse oblongis et labello oblongo ad basim lobato distinguitur.

Plant very small, epiphytic, long-repent, scandent, with branches up to 8 cm long or longer, the rhizomes slender, 4-5 mm long between ramicauls, enclosed by 2 long-ciliate, imbricating, lepanthiform sheaths; roots slender. Ramicauls 0.5 mm long, concealed by 1 long-ciliate, lepanthiform sheath. **Leaf** coriaceous, elliptical, obtuse to rounded at the apex, glabrous, 4-5 mm long, 3-4 mm wide, 3-veined, the base contracted into a petiole 0.25 mm long. **Inflorescence** a single flower followed by a second, borne by an ascending peduncle 0.5 mm long from near the apex of a ramicaul; floral bract infundibular, long-ciliate, 1 mm long; pedicel 1.5-2 mm long; ovary smooth, 1 mm long; all floral parts reddish tan, **sepals** membranous, glabrous externally, cellular within, the dorsal sepal obovate, acute, convex, 2 mm long, 1.4 mm wide, 3-veined, connate to the lateral sepals for 0.5 mm, the lateral sepals ovate, oblique, subacute, 2 mm long, 1.5 mm wide, connate 0.25 mm, 3-veined, widely diverging; **petals** densely cellular-pubescent, sparsely long-ciliate, triansversely bilobed, oblong, 0.5 mm long, 1.6 mm wide, the lobes oblong with rounded apices, the upper lobe twice longer; **lip** protuberant, sparsely long-ciliate, 3-lobed, 1.6 mm long, 0.75 mm wide, 2.25 mm wide expanded, with the apical lobe oblong, broadly rounded at the apex, the basal lobes rounded, encircling the column, the base connate by a short, narrow claw to the base of the column; column 0.5 mm long, the anther and the stigma apical.

ECUADOR: **Tungurahua**: Cerro Abitagua, alt. ca. 1860 m, 17 June 1998, *L. Jost 1063* (Holotype: MO), C. Luer illustr. 18930.

Among the species of subgenus *Brachycladium*, this species is one of the smallest. It is without close allies. It is distinguished by the very small habit with elliptical, glabrous leaves; an extremely short peduncle bearing the tiny, reddish flower from a short pedicel below the tip of the leaf; triangular lateral sepals diverging 180°; transversely oblong, long-ciliate petals; and a protuberant, oblong, long-ciliate lip with basal lobes surrounding the column.

Lepanthes mendozae Luer & D'Alessandro, sp. nov.

Ety.: Named in honor of Luís Mendoza of Vilcabamba, Ecuador, son of the late Herman Mendoza.

Species haec *L. ictalurus* Luer affinis, sed sepalis profunde connatis, synsepalo profunde concavo, petalis longissime ciliatis et labelli caudis brevibus incurvis differt.

Plant small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 1.5-3 cm long, enclosed by 5-7 long-ciliate, lepanthiform sheaths. **Leaf** erect, coriaceous, broadly elliptical to suborbicular, 10-11 mm long, 8-9 mm wide, the apex obtuse to rounded, the rounded base contracted into a petiole 1 mm long. **Inflorescence** a successively flowered, flexuous, distichous raceme up to 15 mm long including the filiform peduncle 8-9 mm long; floral bract 1.5 mm long; pedicel 1.5 mm long; ovary 1 mm long, with sparsely papillose wings; **sepals** red, with lacerate margins and carinate nerves externally, the dorsal sepal broadly ovate, concave, 11 mm long, 9 mm wide, connate to the lateral sepals for 5 mm, the lateral

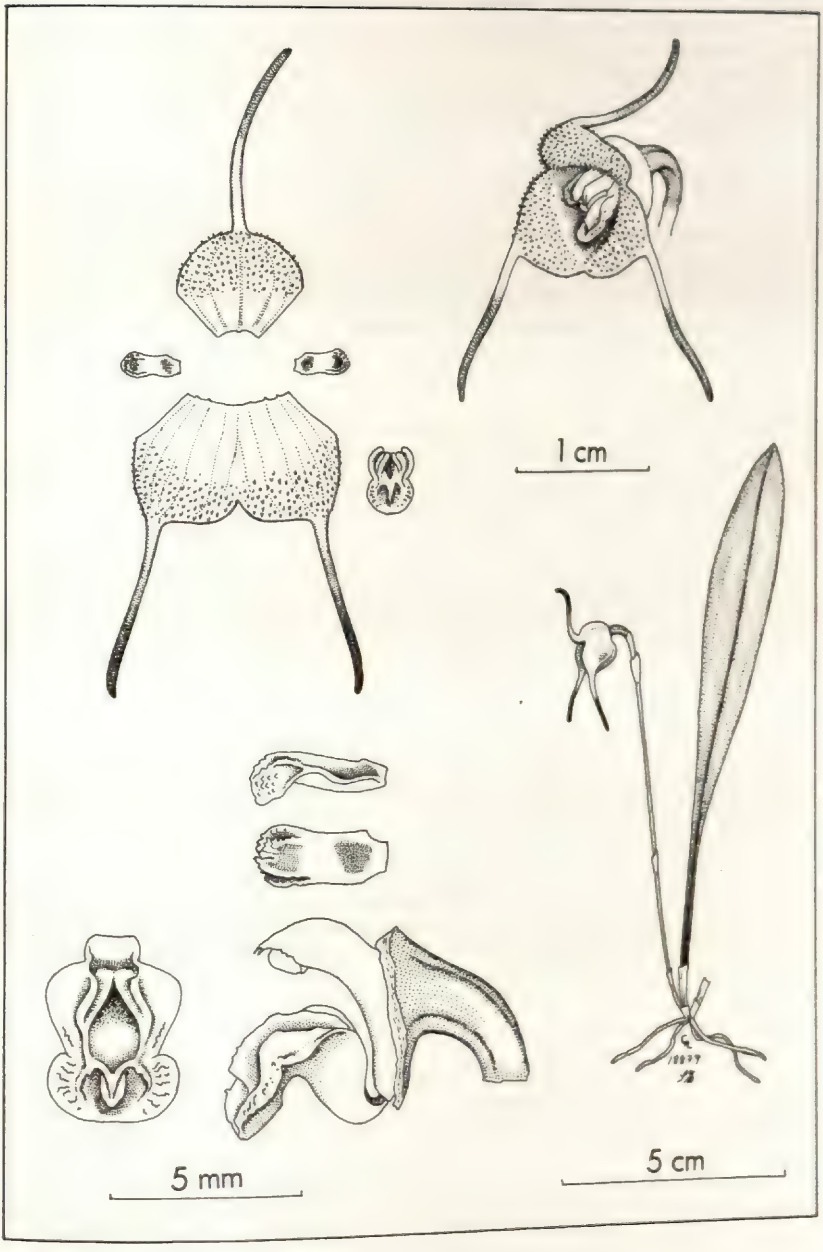


Plate 112. *Dracula adrianae* Luer

sepals connate to the tips into an ovate, deeply connate, shortly bifid lamina, 11 mm long, 9.5 mm wide; **petals** red, long-ciliate-pubescent, markedly unequally transversely bilobed, 0.75 mm long, 4 mm wide, arising above the base of the column, the upper lobes short, rounded, the lower lobes oblong, acute, long attenuate; **lip** red, glabrous, bilaminate, the blades suboblong, 3 mm long, the apex of each contracted into a narrow, incurved appendage 1 mm long, the connectives short, broad, forming a broad body, connate to the column above the middle, the sinus obtuse with the appendix reduced to a microscopic apiculum; **column** slender, cylindrical, 2.5 mm long, the anther dorsal, the stigma ventral with a protruding, forked, stigmatic process.

ECUADOR: **Zamora-Chinchipe**: Porvenir, alt. 1800 m, Mar. 1998, *D. D'Alessandro 5* (Holotype: MO), C. Luer illustr. 18815.

This species is rare and endemic in southeastern Ecuador where a single plant has been discovered on two occasions. It is closely related to *L. ictalurus*, which is relatively frequent and widely distributed. *Lepanthes mendozae* is distinguished by the smaller habit, larger flower, deeply connate sepals, deeply concave synsepal, and shorter tails of totally glabrous blades of the lip. Both species are characterized by fringed sepals; long-ciliate petals with a minute upper lobe and a long-attenuate lower lobe; more or less oblong blades of the lip with narrow, apical appendages; and a long, slender column with the petals connate near the basal quarter, and the lip connate near the middle.

Lepanthes mooreana Luer & Jost, sp. nov.

Ety.: Named for John V. Moore, neotropical ornithologist of San José, California.

Planta mediocris, racemo congesto secundo quam folio anguste ovato acuminato pubescenti breviore, sepalis ciliatis longiacuminatis, petalis transverse lobatis glabris, labelli laminis anguste oblongis glabris connectivis supra medium brevibus, et appendice triangulari distinguitur.

Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, suberect to horizontal, 6-10 cm long, enclosed by 12-14 long-ciliate, widely dilated, whitish, lepanthiform sheaths. **Leaf** more or less pendent, coriaceous, suffused with purple, minutely and densely pubescent, narrowly ovate, acute, acuminate, sulcate dorsally, 7-7.5 cm long, 1.5-1.7 cm wide, the base cuneate into a petiole 1-2 mm long. **Inflorescence** a congested, secund, successively many-flowered raceme, up to 15 mm long, borne in the sulcus on the dorsum of the leaf by a slender peduncle 10-25 mm long; floral bracts 1.5-2 mm long, minutely ciliate on the margins; pedicels 1.5 mm long; ovary 1 mm long, carinate-ciliate; **sepals** ovate, acute, acuminate, ciliate, carinate-ciliate, the dorsal sepal dull yellow, suffused with purple-brown, 8 mm long, 3 mm wide, connate to the lateral sepals for 1 mm, the lateral sepals purple-brown, free, oblique, diverging, concave basally, 9.5 mm long, 2.5 mm wide; **petals** dark yellow, suffused with purple medially, glabrous, bilobed, 0.75 mm long, 4.25 mm wide, the lobes obliquely oblong, narrowly obtuse, the lower lobes longer than the upper lobe; **lip** purple, bilamellate, the blades glabrous, narrowly oblong, 2.5 mm long, covering the column, with the ends rounded, the connectives short, cuneate, from above the middle, the body narrow, connate to the base of the column, the appendix small, broadly triangular; **column** 1-1.5 mm long, the anther apical, the stigma broadly dilated, subapical.

ECUADOR: **Tungurahua**: Cerro Abitagua, alt. ca. 1900 m, 4 Mar. 1998, *L. Jost 86* (Holotype: MO), C. Luer illustr. 18926.

This species of series *Lepanthes* subsection *Lepanthes* would be placed among those with "the most unusual leaves." The shortly but densely pubescent leaves are narrowly ovate, long-acuminate, and pendent, borne by ramicauls clad in white, broadly dilated, long-ciliate, lepanthiform sheaths. The congested raceme lies in the sulcus on the dorsum of the leaf. The sepals are ciliate and long-acuminate with the tails of the laterals diverging and incurved. The oblong, diverging lobes of the petals are glabrous. The parallel, narrowly oblong blades of the lip are also glabrous. The connectives bear the blades above the middle, and the appendix is short and triangular.

Lepanthes mulleriana Luer, sp. nov.

Ety.: Named for Philip Muller of Mountain View, CA, who has successfully cultivated this species.

Planta parva, racemo laxo folio late ovato obtuso plus minusve longiore, sepalorum marginibus minutissime undulatis, synsepalo bifurcato, petalis transverse lunatis et labello bilobato, lobis triangularibus longispiculatis distinguitur.

Plant very small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 1.5-5 cm long, enclosed by 4-5 microscopically scabrous, lepanthiform sheaths. **Leaf** erect, coriaceous, broadly ovate, obtuse, 12-22 mm long, 10-13 mm wide, the base broadly cuneate to rounded, contracted into a petiole 1-3 mm long. **Inflorescence** a subcongested, distichous, successively few-flowered raceme, up to 6 mm long, borne behind and eventually equalling or passing the leaf by a slender peduncle 9-20 mm long; floral bracts 1.25 mm long, minutely muriculate; pedicels 1.5 mm long; ovary 1.5 mm long; **sepals** whitish, striped with rose along the veins, the margins minutely undulate, with a zone of scurfy trichomes a short distance within the margins, the veins branching, the dorsal sepal broadly ovate, obtuse, shortly-acuminate, 8.5 mm long, 6.25 mm wide, connate to the lateral sepals for 1.5 mm, the lateral sepals connate 6 mm into an ovate, shortly bifid, synsepal, 8.5 mm long, 7 mm wide, with the tips of the laterals acute; **petals** white, rose-purple at the tips and base, transversely lobed, crescent-shaped, 1 mm long, 3 mm wide, the lobes obliquely triangular, narrowly obtuse, the lobes equal; **lip** rose-purple, triangular-bilobed, shortly cleft, the lobes triangular, 1.5 mm long, 3 mm wide expanded, flanking the column, with the corners narrowly rounded, the margins long-ciliate, connate basally to the base of the column, an appendix absent; **column** 2 mm long, the anther and the stigma apical.

ECUADOR: Without collection data, purchased from José Portilla by Philip Muller, cultivated at Mountain View, CA, March 1998, *P. Muller 200* (Holotype: MO), C. Luer illustr. 18785. Without collection data, cultivated at Orchideeënkwerkerij Venhuizen, The Netherlands, by *A.P. Sijm s.n.* (MO).

This species of subsection *Lepanthes* is cultivated without collection data. It has no close relatives. It is distinguished by the small habit and a broadly elliptical leaf with proportionately large, successive flowers that eventually are borne beyond the leaf. The margins of the sepals are minutely undulate, and a short distance within the margins the surface bears a zone of scurfy trichomes. The petals are transversely crescent-shaped. The lobes of the lip are triangular with the margins long-ciliate-spiculate. No appendix is present.

Lepanthes serialina Luer & Jost, sp. nov.

Ety.: From the Latin diminutive of *series*, "a little series," referring to the prolific habit.

Species haec *L. series* Luer & Hirtz similis, sed floribus multiminoribus, petalis transverse oblongis et appendice oblonga apice bilobata differt.

Plant small, epiphytic, scandent; roots slender. Ramicauls suberect, prolific, 11 mm long, enclosed by 3 ciliate, lepanthiform sheaths. **Leaf** erect, coriaceous, elliptical, obtuse, 9-11 mm long, 6-7 mm wide, the base broadly cuneate into the petiole 1 mm long. **Inflorescence** a loose, subflexuous, successively few-flowered raceme up to 20 mm long including the filiform peduncle 13 mm long; floral bract 1.5 mm long, spiculate; pedicel 1.5-2 mm long; ovary 1 mm long, crested; all floral parts dark red-brown; **sepals** ovate, subacute, shortly acuminate, the dorsal sepal concave, 2 mm long, 1.4 mm wide, 3-veined, connate to the lateral sepals for 0.25 mm, the lateral sepals denticulate, oblique, 2 mm long, 0.9 mm wide, 1-veined, barely connate at the base; **petals** densely short-pubescent, transversely bilobed, 0.4 mm long, 1.6 mm wide, the lobes subequal, opposite, triangular, with the tips rounded; **lip** bilaminate, the laminae oblong, 1 mm long, densely short-pubescent, the ends narrowly rounded, the connectives broadly cuneate, the body broad, connate to the column above the base, with the sinus obtuse, the appendix oblong, bilobulate at the apex, pubescent basally; **column** 1 mm long, the anther and stigma apical.

ECUADOR: **Napo**: Guacamayo Range, alt. 2100 m, May 1998, *L. Jost & M. Lysinger 147* (Holotype: MO), C. Luer illustr. 18927.

This little climbing species is closely allied to *L. series*, and like *L. series*, it is known from only one specimen. Vegetatively, the two species are similar, the lepanthiform sheaths of *L. serialina* being conspicuously ciliate. The racemes are loosely few-flowered. The floral parts are less than half the dimensions of those of *L. series*. The lateral sepals are denticulate; the petals are transversely oblong, proportionately much larger than those of *L. series*; and the minute blades of the lip are oblong and pubescent. The appendix is oblong and bilobed at the apex.

Lepanthes viebrockiana Luer & Jost, sp. nov.

Ety.: Named in memory of Betty Viebrock, mother of John V. Moore, ornithologist.

Species haec *L. platysepalae* Luer & Escobar similis, sed flore minore, sepalis lateralibus longiciliatis, petalis trilobis et labelli lobis basalibus elongatis differt.

Plant small, epiphytic, repent, with branches up to 8 cm long or longer, the rhizomes slender, 4-5 mm long between ramicauls, enclosed by 2 ciliate, imbricating, lepanthiform sheaths; roots slender, from nodes along the rhizome. Ramicauls 0.5-0.75 mm long, concealed by 1 similar, lepanthiform sheath. **Leaf** coriaceous, ciliate-denticulate, elliptical, obtuse to rounded at the apex, 5-6 mm long, 3.5-4.25 mm wide, 3-veined, the base contracted into a petiole 0.25 mm long. **Inflorescence** a single flower followed by a second, borne by an ascending peduncle 4-6 mm long from near the apex of a ramicaul; floral bract ciliate, 1.25 mm long; pedicel 3 mm long; ovary carinate-spiculate, 2 mm long; **sepals** purplish on outer halves, whitish on inner halves, cellular-pubescent within, the dorsal sepal erect, broadly obovate, obtuse, shallowly concave, 3.75 mm long, 2 mm wide, 3-veined, barely connate to the lateral sepals, the lateral sepals ciliate-denticulate, connate 1.25 mm into an ovate, bifid lamina, 3.5 mm long, 1.5 mm wide, 4-veined, with the apices acute, diverging; **petals** white suffused with purple, glabrous, trilobed, 0.75 mm long, 1 mm wide, the lobes broad with rounded apices, the upper lobe twice longer than the other 2; **lip** white suffused with purple, glabrous, subtriangular-subcordate, 1.5 mm long, 1.25 mm wide expanded, with the apex broadly rounded, with the sides clasping the column, the base with retrorse lobes; column 2 mm long, the anther and the stigma apical.

ECUADOR: **Tungurahua**: Cerro Abitagua, alt. 1750 m, 8 June 1998, *L. Jost 1035* (Holotype: MO), C. Luer illustr. 18929.

Among the species of subgenus *Brachycladium*, this species is most similar to the Colombian *L. pachysepala*. The dorsal sepal is erect, broadly obovate and shallowly concave; the lateral sepals are long-ciliate and connate to about the middle; the petals are three-lobed, with the lobes short and rounded on the ends; and the lateral lobes of the lip closely surround the shaft of the column.

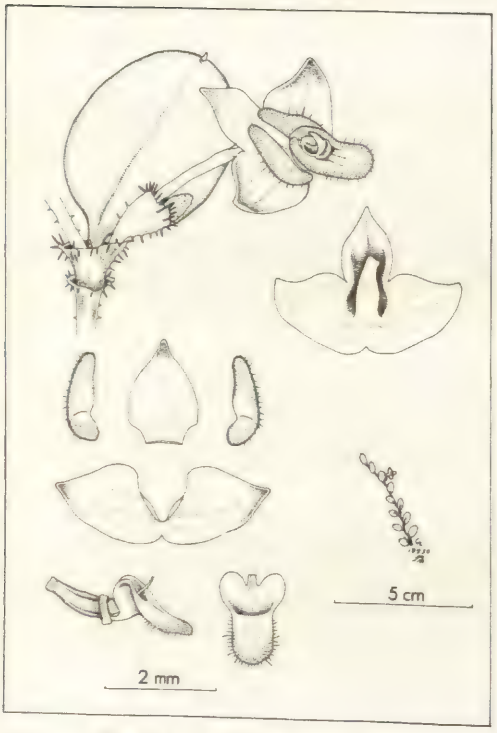


Fig. 287. Lepanthes ariasiana

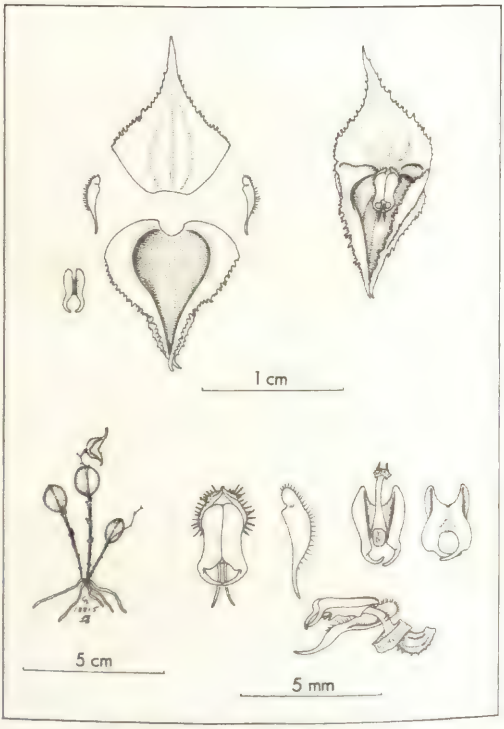


Fig. 288. Lepanthes mendozae

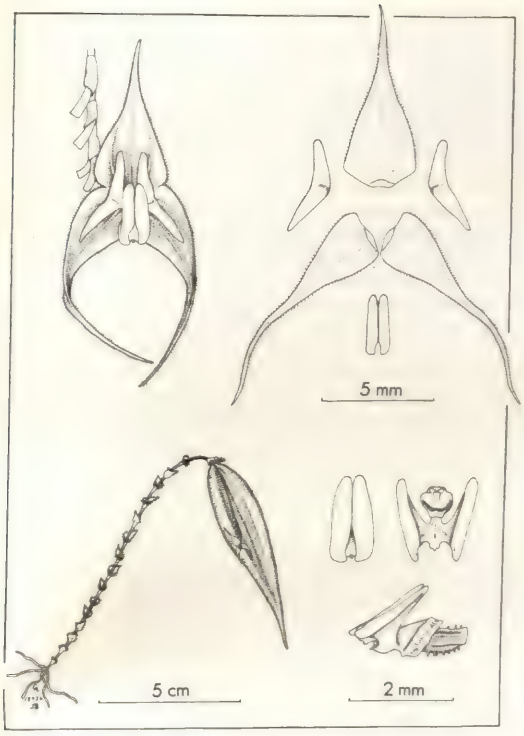


Fig. 289. Lepanthes mooreana

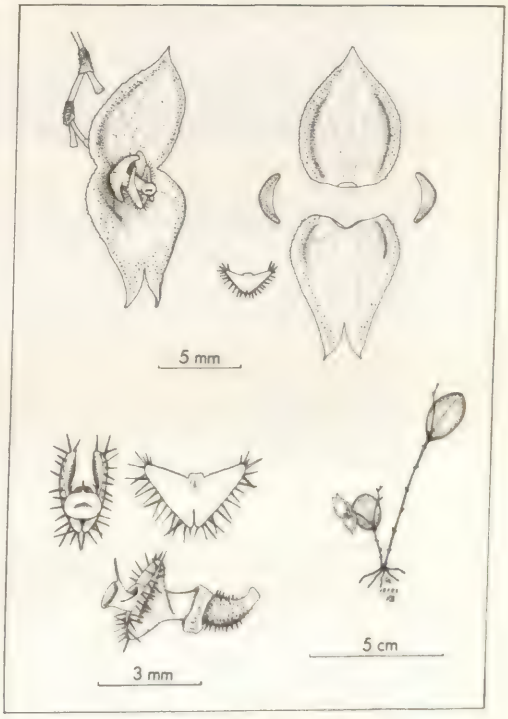


Fig. 290. Lepanthes mulleriana

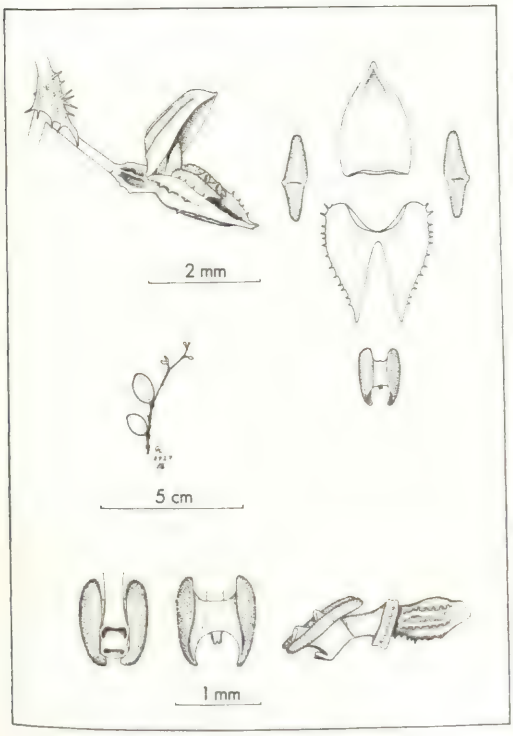


Fig. 291. Lepanthes serialina

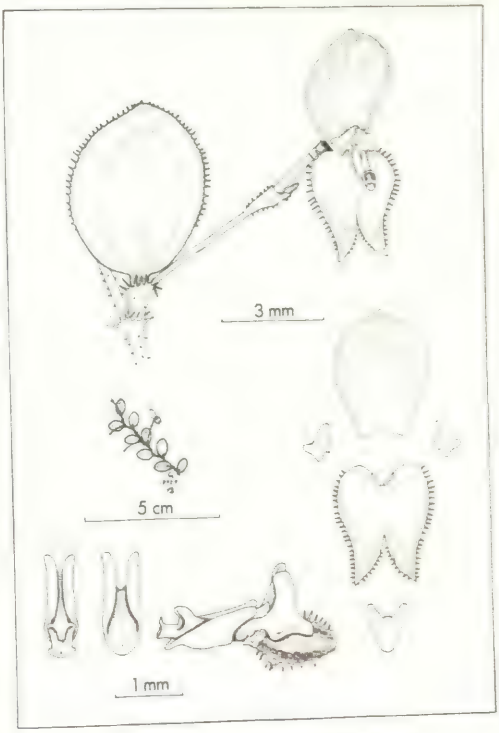


Fig. 292. Lepanthes viebrockiana

Masdevallia adrianae Luer, sp. nov.

Ety.: Named in honor of the wife of Antonius (Ton) Sijm of Venhuizen, The Netherlands, who, as well as Patrick Cloes of Hasselt, Belgium, cultivates this species.

Inter species subsectionis *Alaticaules*, sepalo dorsali ad medium con synsepalo in tubum aurantiacum gibbosum connato, sepali dorsalis cauda tubulosa, synsepali apicibus subacutis, petalis oblongis callosis, labello oblongo marginibus supra medium plicatis dignoscenda.

Plant medium in size, presumably epiphytic, caespitose; roots slender. Ramicauls erect, 1.5-2.5 cm long, enclosed by 2-3 loose, tubular sheaths. **Leaf** erect, coriaceous, 8-12 cm long including the petiole 2-3 cm long, the blade elliptical, subacute, 1.5-2 cm wide, cuneate below into the petiole. **Inflorescence** a congested raceme of successive flowers borne by a slender, suberect, sharply triquetrous peduncle 15-19 cm long, with a bract near the base, from low on the ramicaul; floral bracts imbricating, ca. 10 mm long; pedicel 12-13 mm long; ovary 5 mm long; **sepals** fleshy, glabrous, yellow-orange, suffused with purple beyond the orifice of the tube, the dorsal sepal elliptical, 18 mm long excluding the tail, 9 mm wide, connate to the lateral sepals for 9 mm to form a cylindrical sepaline tube obtusely gibbous beneath, the apex contracted into a tail tubular with involute margins, 10 mm long, 3 mm wide not expanded, the lateral sepals connate 19 mm into an elliptical, bifid lamina, 26 mm long including the subacute apices 5 mm long, 15 mm wide; **petals** pale yellow, cartilaginous, oblong, 8 mm long, 3 mm wide, the apex obtuse with an ovoid callus, labellar half with a longitudinal callus that is marginal above the middle, submarginal below the middle; **lip** orange, marked with purple, oblong-subpandurate, 6 mm long, 2 mm wide, with marginal folds above the middle, the epichile apex smooth, convex, the hypochile flat, subcordate at the base, hinged below to a short, incurved extension;**column** semiterete, slender, 6 mm long, the foot 4 mm long.

ECUADOR: Without collection data, obtained from José Portilla, collector, cultivated in Hasselt, Belgium, by *Patrick Cloes 97828* (Holotype: MO), C. Luer illustr. 18795; obtained from same source, cultivated in Venhuizen, The Netherlands, by *Ton Sijm s.n.* (MO).

This species of subsection *Alaticaules* is similar in habit to the majority of species contained therein. The flowers are produced successively in a congested raceme borne by a slender peduncle that exceeds the leaf. The sepals are deeply connate into an orange tube that is obtusely swollen on the bottom side. With incurving sides, the dorsal sepal forms a tube-like tail beyond the tube. The lateral sepals are suffused with red-purple and are connate to within 5 mm of subacute apices. The petals are oblong and longer than the lip which is divided above the middle by marginal folds.

Masdevallia maduroi Luer, sp. nov.

Ety.: Named for Andrés Maduro of Panamá, collector and cultivator of this species.

Planta mediocris, pedunculo tenuissimo successivifloro arcuato pendenti, sepalis anguste caudatis in tubum brevem plus minusve depressum connatis, synsepalo rugoso ad medium anguste concavo, petalis alte lamellatis, labello magno infra ad medium cum extensione pedis columnae connexo distinguitur.

Plant medium in size, epiphytic, caespitose; roots comparatively slender. Ramicauls erect, stout, 1.5-3 cm long, enclosed by 2-3 loose, deciduous, tubular sheaths. **Leaf** erect, thickly coriaceous, 9-15 cm long including the petiole 2.5-3.5 cm long, the blade elliptical-obovate, obtuse, 2-3 cm wide, cuneate below into the stout, deeply channeled petiole. **Inflorescence** a successive, loosely few-flowered raceme, 0.5-2 cm between flowers, borne by a very slender, arching to pendent peduncle 15-17 cm long, with 2-3 distant bracts, from the base of a ramicaul; floral bract tubular 8-10 mm long; pedicel 7-9 mm long; ovary 8-10 mm long; **sepals** glabrous, the dorsal sepal forwardly directed, yellow-green, suffused with purple above the middle and along the veins, light orange toward the base, broadly ovate, 17 mm long, 16 mm wide, obtuse, contracted into a slender, yellow-green tail 4-5.5 cm long, connate to the lateral sepals for 7 mm into a somewhat flattened flower with a short sepaline cup, the lateral sepals purple, connate 23 mm into an ovate, deeply rugose, bifid lamina, 35 mm long, 25 mm wide, concave centrally, the apices acute, contracted into light green tails similar to that of the dorsal sepal; **petals** white, cartilaginous, obliquely elliptical, narrowly truncate, 9 mm long, 4 mm wide, with a tall, erect lamella above the labellar margin, terminating above the base in an acute angle; **lip** yellow above the middle, tan below the middle, oblong-pandurate, narrowed near the middle, 10 mm long, 5 mm wide, the apex obtuse, minutely denticulate, the disc with a pair of oblique folds above the middle, shallowly concave below the middle, the base subcordate, hinged beneath nearly to the middle; **column** white, semiterete, 8 mm long, the foot 4 mm long, the free extension 3.5 mm long.

PANAMA: **Chiriquí**: "Fortuna," alt. 1200 m, collected and cultivated by Maduro's Tropical Flowers, flowered in cultivation at J & L Orchids, Easton CT, 16 Oct. 1998, *C. Luer 18932* (Holotype: MO).

This species of subsection *Polyanthae*, recently discovered in western Panama, is indeed different from all the others, but it is most similar to *M. thienii* Dodson. The extremely thin peduncle originates from the base of a ramicaul. The peduncle is about as long as the leaf, but because of the weight of the large, successive flowers, the raceme becomes pendent. The sepals are connate into a cup with the dorsal sepal held forward. The lateral sepals are connate into a deeply rugose synsepal with a central, conical concavity. A tall lamella is present on the petals above the lower margin. The lip is large with prominent, non-marginal folds at a constriction above the middle. Most unusual is the large callous base beneath that extends nearly to the middle, to which the extension of the column-foot is hinged.

Masdevallia monicana Luer sp. nov.

Ety.: Named for Monica de Navarro, who cultivates this species in her collection in Quito, Ecuador.

Species haec *M. pachyanthae* Rchb.f. affinis, sed pedunculo longiore et sepalis in tubum cylindriduplo longiore differt.

Plant large, presumably epiphytic, caespitose; roots fleshy. Ramicauls erect, stout, 3 cm long, enclosed by 2-3 loose, tubular sheaths. **Leaf** erect, thickly coriaceous, 10-12 cm long including the petiole 2 cm long, the blade elliptical, obtuse, 2-2.5 cm wide, cuneate below into the petiole. **Inflorescence** a solitary flower borne by a stout, erect peduncle 9-10 cm long, with a bract near the base, from low on the ramicaul; floral bract tubular, 1.5 cm long; pedicel 3 cm long; ovary 1 cm long; **sepals** yellow-white, slightly suffused with purple, especially along the veins, glabrous, the dorsal sepal obovate, 25 mm long, 16 mm wide, connate to the lateral sepals for 15 mm to form a cylindrical sepaline tube, the apex subacute, contracted into an erect, slender, light orange tail 4-5 cm long, the lateral sepals connate 24 mm into an oblong, bifid lamina, 30 mm long, 28 mm wide, the apices subacute, contracted into light green tails similar to that of the dorsal sepal; **petals** white, cartilaginous, elliptical, acute, 9 mm long, 4 mm wide, the labellar half thickened in the middle third, the labellar margin broadly obtuse; **lip** purple, suffused centrally with dark purple, yellow toward the base, oblong, slightly dilated above the middle, 10 mm long, 5 mm wide, the apex broadly rounded, minutely muricate, the margin minutely denticulate, the disc with a pair of low, longitudinal calli on the middle third, the base subcordate, hinged beneath; **column** white, suffused with purple along the margins, semiterete, 7 mm long, the foot 4 mm long.

ECUADOR: Without collection data, obtained from José Portilla, collector, cultivated by Monica Navarro in Quito, Ecuador, 20 Feb. 1998, *C. Luer 18761* (Holotype: MO).

This species of subsection *Coriaceae* is similar to the Colombian *M. pachyantha*. They are vegetatively similar with large flowers of the same size and color. *Masdevallia monicana* is distinguished by the peduncle that is more than twice as long. The sepals are at least twice as deeply connate into a cylindrical tube instead of a short, broadly gaping cup. The petals are similar with an acute apex and callous on the labellar half. The lips are also similar, but the pair of calli of *M. monicana* are narrow, while the pair of carinae of *M. pachyantha* are thick and verrucose.

Masdevallia newmaniana Luer & Teague, sp. nov.

Ety.: Named for Daniel Newman of San Francisco, California, who cultivates this species. .lh8

Species haec *M. goliatidis* Luer & Andreetta affinis, sed flore multiminore, petalis submarginale carinatis et labello obovato late obtuso infra apicem calloso dignoscenda.

Plant medium in size to large, presumably epiphytic, caespitose; roots fleshy. Ramicauls erect, stout, 2-2.5 cm long, enclosed by 2-3 loose, tubular sheaths. **Leaf** erect, thickly coriaceous, 13-15 cm long including the petiole ca. 3 cm long, the blade elliptical, subacute, 2-2.5 cm wide, gradually narrowed below into the petiolate base. **Inflorescence** a successively few-flowered raceme borne by a terete, more or less ascending peduncle 27-40 cm long, with 2-3 close bracts below the middle, from low on the ramicaul; floral bract tubular, 12-15 mm long; pedicel 12-15 mm long; ovary 10 mm long; **sepals** fleshy, dark red-purple, glabrous externally, minutely glandular-pubescent within, the blade of the dorsal sepal narrowly ovate, acute, attenuated into a slender tail, the total length 95 mm, 9.5 mm wide, connate to the lateral sepals for 5 mm to form a short, cylindrical tube, the lateral sepals with elevated veins within, connate 15 mm into an ovate, broadly and shallowly concave lamina, 20-25 mm long, 20 mm

wide, the acute apices approximate and attenuated into tails ca. 7 cm long, the total length 9.5 cm; **petals** cartilaginous, yellow, dotted with purple, minutely asperate-verrucose above the middle, oblong-obovate, shortly unguiculate, 5 mm long, 2.5 mm wide, the subtruncate apex retuse, bilobed, both halves callous, the upper half only at the apex, the lower half longitudinally carinate, shallowly sulcate centrally; **lip**, yellow, dotted with red-purple, thick, oblong-obovate, 5.5 mm long, 3 mm wide, verrucose, with minutely irregular margins above the middle, the apex rounded, a smooth, rounded callus beneath, disc shallowly sulcate between 3 low veins, the base subcordate, shallowly concave between elevated margins, hinged beneath; **column** greenish white, stout, semiterete, 3 mm long, the foot thick with a very short, incurved extension.

ECUADOR: Without collection data, obtained from José Portilla, collector, cultivated by Newman in San Francisco, California, 22 Oct. 1998, *C. Luer 18944* (Holotype: MO).

This species of subsection *Durae* is closely related to *M. goliath*, with which it very possibly is sympatric in southeastern Ecuador at a relatively low altitude. It is distinguished from the latter by the smaller habit and smaller flower that approaches that of *M. panguiënsis*. From *M. panguiënsis* it is distinguished by longer, more slender tails and verrucose petals. From *M. goliath* it is further distinguished by petals with a carina above the lower margin, and an obovate, broadly obtuse lip without the revolute apex and apical margins.

Masdevallia obscurans Luer, stat. nov.

Bas.: *Masdevallia infracta* Lindl. subsp. *obscurans* Luer, Lindleyana 3: 37, 1988. (Illustration)

Ety.: From the Latin *obscurans*, "covering, darkening," referring to the darkly colored, incompletely opening flower.

This readily recognizable Brazilian species was described as a subspecies of the common and variable *M. infracta*, but the differences that segregate *M. obscurans* are sufficiently distinct to recognize it at the specific level. As the successively flowered raceme elongates, it becomes arcuate and horizontal. The dorsal sepal is connate to the laterals for only slightly over half the length of the blade, instead of nearly the length of the blade. The deep indentation or notch before the chin of the column-foot so characteristic of *M. infracta*, is noticeably shallower. Within, the lateral sepals are deep purple-black with a fine, purple pubescence. Instead of gaping with recurved lateral sepals and long tails, the flower of *M. obscurans* is less widely spread with short, non-recurved tails. The petals and lip are basically similar to those of *M. infracta*, except that the epichile of the lip is broader than the hypochile.

Masdevallia oscitans Luer, stat. nov.

Bas.: *Masdevallia infracta* Lindl. subsp. *oscitans* Luer, Lindleyana 3: 37, 1988. (Illustration)

Ety.: From the Latin *oscitans*, "gaping, yawning," referring to the widely patent flower.

This easily recognized species from Brazil, closely allied to the common and variable *M. infracta* Lindl., was initially described as a subspecies of that species. The strictly erect peduncle is more slender and proportionately longer than that of the usual *M. infracta*. Instead of forming a deeply cupped sepaline tube, the dorsal sepal is connate to the lateral sepals for no more than half its length into a comparatively short tube with the lateral sepals spread widely into a flat surface beyond the tube. The long, slender tail of the dorsal sepal is acutely reflexed. The petals and lip are basically the similar to those of *M. infracta*, except that the epichile of the lip is broader than the hypochile.

Masdevallia polychroma Luer, sp. nov.

Ety.: From the Greek *polychroma*, "of many colors," referring to the colorful, little flower.

Inter species subsectionis *Caudatae* planta mediocris, foliis obtusis petiolatis pedunculo subaequilongo, sepalis late ovatis obtusis patentibus longicaudatis, sepalo dorsali aureo, rubro micropapilloso, sepalis lateralibus roseis, petalis acutis cum dente retroso grandi, et labello oblongo truncato distinguitur.

Plant small, epiphytic, caespitose; roots slender. Ramicauls erect, slender, blackish, 8-11 mm long, enclosed by 2-3 loose, tubular sheaths. **Leaf** erect, coriaceous, 4-6.5 cm long including the petiole 1-2 cm long, the blade elliptical, subacute, 1.3-1.6 cm wide, cuneate below into the blackish petiole. **Inflorescence** a solitary flower borne by a slender, erect peduncle 4.5 cm long, with a bract near the base, from low on the ramicaul; floral bract tubular, 8 mm long; pedicel 10 mm long; ovary 5 mm long; **sepals** glabrous externally, the dorsal sepal light golden yellow, minutely red-cellular-papillose within, obovate, 14 mm long, 10 mm wide, connate to the lateral sepals for 6 mm to form a shallow, gaping, sepaline cup, the apex rounded, abruptly contracted into an erect, slender, yellow-green tail 3 cm long, the lateral sepals light rose, suffused with rose along the veins, broadly ovate, oblique, 13 mm long, 12 mm wide, connate 5 mm, the apices oblique, obtuse, contracted into slender, yellow-green tails similar to that of the dorsal sepal; **petals** white, cartilaginous, more or less oblong, 5 mm long, 1.75-2.75 mm wide, the apex acute, the labellar margin with a thick, longitudinal winglike carina, produced into a large, thick, retrorse process above the base; **lip** rose, dotted with purple, elliptical-oblong, 5 mm long, 2.75 mm wide, the apex subtruncate, with a small, marginal callus, the disc with an indistinct pair of longitudinal calli, the base rounded, hinged beneath; **column** white, suffused with purple along the margins. semiterete, 4 mm long, the foot 3 mm long including a long, incurved extension.

ECUADOR: Without collection data, obtained from José Portilla collector, cultivated by J & L Orchids 498-559, 16 Apr. 1998, *C. Luer 18791* (Holotype: MO).

This species is related to those members of subsection *Caudatae* that are allied to the *M. xanthina*-complex characterized by a shallow, gaping, long-tailed, sepaline cup. It is distinguished from all of them by the golden yellow dorsal sepal studded with red cells within; light rose lateral sepals with darker rose veins; acute petals with a large, thick, retrorse tooth; and a rose, oblong lip with a minute marginal callus at the broad apex.

Masdevallia robusta Luer, sp. nov.

Ety.: From the Latin *robustus*, "robust," referring to the habit

Inter species subsectionis *Durae* planta grandis, foliis acutis petiolatis, racemo suberecto pauciflore, sepalis atropurpureis glabris longicaudatis in tubum nongibbosum connatis, petalis cartilagineis oblongis et labello oblongo denticulato infra apicem alte carinato ad basim cum cavitatibus duobus distinguitur.

Plant large, robust, presumably epiphytic, caespitose; roots coarse. Ramicauls stout, erect, 4-5.5 cm long, enclosed by 2-3 tubular sheaths. **Leaf** erect, coriaceous, 14-21 cm long including the petiole 3-5 cm long, the blade narrowly elliptical, acute, 2.5-3 cm wide, narrowly cuneate below into the petiole. **Inflorescence** a loose, successively few-flowered raceme borne by a stout, ascending peduncle 15-22 cm long, with a bract on the lower quarter and also above the base, from near the base of the ramicaul; floral bract inflated, 15-22 mm long; pedicel 12-15 mm long; ovary 7 mm long; **sepals** dark purple, subcarinate along the veins, glabrous, the dorsal sepal obovate, 20 mm long, 16 mm wide, 3-veined, connate to the lateral sepals for 13 mm to form a broad, infundibular, non-gibbous, sepaline tube, the free portion broadly obtuse, contracted into a slender, purple tail, 5.5-6 cm long, the lateral sepals ovate, oblique, 35 mm long, connate 18 mm into a lamina 28 mm wide, 3-veined, the apices near, acute, contracted into slender tails similar to that of the dorsal sepal; **petals** light yellow, dotted with purple, thickly cartilaginous, shiny, oblong, irregularly truncate at the apex, broadly short-unguiculate at the base, 6.5 mm long, 3 mm wide, shallowly concave along the central vein, callous on both halves; **lip** thick, yellow, dotted with purple, oblong with minutely denticulate margins, 7 mm long, 3 mm wide, the apex rounded, with a minutely denticulate keel beneath, the disc minutely muricate, shallowly sulcate between a pair of low, converging calli above the middle, the base subcordate, each side concave, hinged on the end to the tip of the column-foot; **column** semiterete, 5 mm long, the foot thick with the apex of the ovary.

ECUADOR: Without collection data, obtained from a collector, cultivated at Orchideeënkwekerij, Venhuizen, The Netherlands, 25 July 1998, *Ton Sijm 16520* (Holotype: MO), C. Luer illustr. 18876.

This large species, a member of subsection *Durae*, is most closely allied to the Peruvian *M. ayabacana* Luer. It differs from the latter, as well as from the other

members of the subsection, by acute, distinctly petiolate leaves. From *M. ayabacana* it differs in a non-gibbous sepaline tube, oblong petals, and a lip with a keel beneath the apex, and with well-developed basal recesses as seen in *M. dura* Luer.

Masdevallia schizostigma Luer, sp. nov.

Ety.: From the Greek *schizostigma*, "a split stigma," referring to the divided stigma.

Planta parva, *M. sanchezii* Luer similis, sed labello laevi ad basim columnae inflexible connato, et stigmate bifurcato distinguitur.

Plant small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, blackish, 0.5-1 cm long, enclosed by 2-3 tubular sheaths. **Leaf** erect, coriaceous, petiolate, 4-6 cm long including the petiole 1.5-2 cm long, the blade narrowly elliptical, subacute, 0.8-1 cm wide, narrowly cuneate below into the blackish petiole. **Inflorescence** a single flower borne by an ascending, slender peduncle 4-5 cm long, with a bract near the base, from low on the ramicaul; floral bract 4 mm long; pedicel 4 mm long; ovary 4 mm long, carinate; **sepals** yellow, tricarinate along the veins, the dorsal sepal ovate, 25 mm long including the tail, 4.5 mm wide, 3-veined, connate to the lateral sepals for 4.5 mm to form a sepaline tube, the free portion triangular, the apex acute, attenuated into a slender, antrorse tail, the lateral sepals narrowly ovate, 25 mm long including the tails, each 3 mm wide, 3-veined, connate 6 mm without forming a shallow mentum, rose, the apices attenuated into slender, yellowish tails; **petals** white, glabrous, narrowly elliptical, sharply acute, 6 mm long, 1.5 mm wide, 1-veined, slightly thickened along the labellar margin; **lip** yellow, smooth, narrowly elliptical-ovate, sharply acute, 7 mm long, 1.5 mm wide, 1-veined, the disc featureless, the base truncate, inflexibly attached to the base of the column; **column** semiterete, 2.5 mm long, the anther operculate, non-deciduous, the stigma bifurcated, the foot obsolescent.

PERU: **Amazonas**: El Mirador, alt. 2000 m, July 1998, *Patrick Cloes s.n.* (Holotype: MO), C. Luer illustr. 18886.

This little species, apparently endemic in northeastern Peru, was collected by Patrick and Martine Close of Hasselt, Belgium. Superficially, the small, yellow, slender-tailed flower appears similar to *M. sanchezii*, with the acute tips of the petals and lip visible peeking out the sepaline tube. The petals and lip are similar to each other: narrowly elliptical and sharply acute. The single-veined lip is smooth and featureless. The truncate base is inflexibly connate to the base of the column. The anther is operculate and nondeciduous. The stigma is shallowly cleft between two short, pedicellate, stigmatic lobes, a feature heretofore unknown in the genus.

Porroglossum tripollex Luer, sp. nov.

Ety.: From the Latin *tri-pollex*, "with three thumbs," referring to the sepaline tails.

Inter species generis *Porroglosso* Schltr. planta parva, folio elliptico petiolato, ovario nontorto, sepalis albis, sepalis supra medium late tubulosis, petalis subclavatis supra basim acute angulatis, labelli lamina cuneata cum callo humili notabilis.

Plant small, presumably epiphytic, caespitose; roots slender. Ramicauls black, erect, slender, 9-11 mm long, enclosed by 2-3 deciduous, tubular sheaths. **Leaf** erect, coriaceous, dark green, lightly verrucose on the dorsum, long-petiolate, 4.5-5.5 cm long including the petiole 1.5-2.5 cm long, the blade elliptical, subacute to obtuse, 0.9-1 cm wide, cuneate below into the blackish petiole. **Inflorescence** a successively few-flowered raceme, borne by a slender, glabrous peduncle 3.5 cm long, with a bract below the middle, from low on the ramicaul; floral bracts tubular, 4-5 mm long; pedicel 4 mm long; ovary not twisted, 3 mm long; **sepals** white, lightly suffused with purple at the base, glabrous, the dorsal sepal ovate, concave below the middle, 14 mm long, 5 mm wide, connate to the lateral sepals for 2 mm to form a rounded cup, the apex thickly tubular with revolute margins, 3 mm wide, rounded at the tip, the lateral sepals ovate, oblique, 13 mm long, 5 mm wide, connate 4 mm, the apices narrowed into tubular tails similar to that of the dorsal sepal; **petals** white, oblong-ovate, 4.5 mm long, 1-2 mm wide, narrowed below the slightly dilated, rounded apex, the lower margin acutely angled below the middle; **lip** with the blade cuneate-obovate, slightly concave, 4 mm long, 3.75 mm wide, thickened toward the base with a low callus, the apex transverse, truncate, microscopically ciliate, shortly obtusely apiculate with a shallow, midline sulcus, the base deflexed into a short, straplike claw 2 mm long, bent with tension about the free apex of the column-foot; **column** stout, semiterete, 1.5 mm long, with a slender, curved foot 4 mm long, the stigma without processes.

ECUADOR: Without collection data, obtained from José Portilla, Oct. 1998, in San Francisco, California, by *Walter Teague 271* (Holotype: MO); without collection data, cultivated by in Stockholm, Sweden, Apr. 1997, *S. Dalström 2278* (MO), C. Luer illustr. 18429.

A flower of this species was first illustrated from a plant cultivated in Sweden, but the plant was lost. The species was next seen from Walter Teague who had obtained the plant from José Portilla without collection data. The non-rotated flowers are easily recognized by the three, thick, "thumb-like" tails of the sepals. The petals are sharply angled on the lower margin below the middle, and the apex is subclavate. The blade of the lip is cuneate with rounded corners.

Scaphosepalum cloesii Luer, sp. nov.

Ety.: Named in honor of Patrick Cloes of Hasselt, Belgium, co-collector of this species.

Species haec *S. dalstroemii* Luer affinis, sed flore minore, sepalorum lateralia caudis semilongioribus et labelli hypochilio epichilioque anguste oblongis distinguitur.

Plant small, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 1-1.5 cm long, enclosed by 2-3 tubular sheaths. **Leaf** erect, coriaceous, 7-8 cm long including a petiole ca. 3 cm long, the blade elliptical, acute, 1.5 cm wide, gradually narrowed below into the slender petiole. **Inflorescence** a distichous, successively many-flowered raceme, loosely flowered below becoming more congested above, up to 5 cm long, borne by slender, suberect peduncle, 6 cm long, from low on the ramicaul; floral bracts acute, 3 mm long; pedicels 8 mm long below, 4 mm long above; ovary carinate, 3 mm long; **sepals** yellow, lightly and sparsely marked with red, carinate, the middle sepal ascending, ovate and concave below, 7.5 mm long, 3.5 mm wide, connate to the laterals for 1 mm, contracted into a thick, ascending tail, 3-4 mm long, 1.3 mm deep toward the apex, the lateral sepals connate 5 mm into an oblong, concave lamina 7.5 mm long, 6 mm wide, microscopically ciliate, the cushions triangular, 3 mm long, 2 mm wide, the tails expanded, slender, verrucose, 4-5 mm long; **petals** obliquely elliptical, 2 mm long, 2 mm wide, with the apex rounded, with the margins broadly undulate; **lip** deeply oblong, reflexed above the middle, 3 mm long, 0.9 mm wide, the epichile oblong, obtuse, microscopically denticulate, the hypochile oblong, with a parallel pair of carinae becoming denticulate crests at the junction with the epichile, the base truncate; **column** semiterete, broadly winged above the middle, 2.5 mm long, with a thick, densely pubescent foot 3 mm long.

ECUADOR: Without collection data, purchased from José Portilla, flowered in cultivation at Hasselt, Belgium, May 1998, *P. Cloes 97828A* (Holotype: MO), C. Luer illustr. 18885.

This species is closely allied to *S. dalstroemii*, but it is distinguished from the latter by a smaller habit with smaller flowers; tails of the synsepal much shorter; and a lip with a narrowly oblong hypochile and epichile. In common, the two species share petals with an undulate margin, and a long, thick, densely pubescent column-foot.

Scaphosepalum globosum Luer & Hirtz, sp nov.

Ety.: From the Latin *globosus*, "like a globe," referring to the cushions of the lateral sepals.

Species haec *S. odontochilo* Kraenzl. affinis, sed flores multiminoribus cum sepalorum callis ovoideis globosis recurvatis differt.

Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 0.5-1 cm long, enclosed by 2-3 tubular sheaths. **Leaf** erect, thinly coriaceous, 5-15 cm long including the petiole 2-6 cm long, the blade elliptical, acute, 1.5-2.5 cm wide, narrowly cuneate below into the slender petiole. **Inflorescence** a subcongested, distichous, successively several-flowered raceme, up to 2 cm long, borne by a slender, smooth peduncle, suberect to descending, from low on the ramicaul; floral bracts acute, 2.5-3 mm long; pedicels 1.5 mm long; ovary smooth, 2 mm long; **sepals** green suffused with purple, carinate, the middle sepal ovoid, deeply concave below the middle, thickly convex above the middle, the apex obtuse, apiculate, 6 mm long, 3 mm wide unexpanded, connate to the lateral sepals for 2 mm to form a broad tube, the lateral sepals connate 2.5 mm into a concave, bifid, oblong lamina 5 mm long, 3 mm wide unexpanded, the cushions ovoid, thick, convex, 2 mm long, 1.5 mm wide, with rounded, recurved, apiculate apices, **petals** white, oblong, oblique, acute, 3 mm long, 1.25 mm wide, slightly constricted above a thickened base; **lip** purple, ovate, subacute, 2 mm long, 1.25 mm wide, the margins deeply denticulate above the middle, the disc with a pair of tall, denticulate-fimbriate lamellae above the middle, the base truncate, minutely bilobulate; **column** green, suffused with purple, semiterete, slender, winged above the middle, 3 mm long, with a thick foot 1.5 mm long.

ECUADOR: **Morona-Santiago**: Cordillera del Condor, epiphytic in forest east of Chuchumbletza, alt. 1750 m, 21 May 1988, *C. Luer, A. Hirtz, W. Flores, A. Andreetta & W. Teague 13561* (Holotype: MO).

This species was first treated as a geographical variation of *S. odontochilum* (*Systematics of Scaphosepalum, Icones Pleurothallidinarum-5*). Although closely allied, the collection from the lowlands of southeastern Ecuador differs significantly from collections of *S. odontochilum* from higher altitudes in Colombia. The flowers are only half the size in dimensions. The thick, cushion-like dorsal sepal recurves to expose the ovoid cushions of the convex, lateral sepals that are also with recurved, apiculate apices. The entrance into the interior of the flower is consequently constricted.

Scaphosepalum jostii Luer, sp. nov.

Ety.: Named in honor of Louis (Lou) Jost, physicist, biologist and artist of Baños, Ecuador, who discovered this species.

Species haec *S. odontochilo* Kraenzl. affinis, sed sepalorum lateralia callis subnullis cum apicibus anguste lineari-triangularibus distinguitur.

Plant medium in size, epiphytic and lithophytic, caespitose; roots slender. Ramicauls slender, erect, 1-2 cm long, enclosed by 2-3 tubular sheaths. **Leaf** erect, thinly coriaceous, 6-11 cm long including a slender petiole 2.5-5 cm long, the blade elliptical, acute, 1.5-2.5 cm wide, narrowly cuneate below into the petiole. **Inflorescence** a congested, distichous, successively several- to many-flowered raceme, up to 1.5 cm long, borne by a slender peduncle, 6-8 cm long, from low on the ramicaul; floral bracts narrowly acuminate, 5 mm long; pedicels 3-4 mm long; ovary 2 mm long; **sepals** pale tan, striped with purple along the veins, carinate, the middle sepal ovate, deeply concave in the lower third, narrowed above with recurved margins to the acute apex, 7.5 mm long, 2.25 mm wide unexpanded, connate to the lateral sepals for 0.5 mm to form a tube, the lateral sepals connate 2.5 mm into a bifid lamina, 7 mm long, 3 mm wide expanded, concave centrally between convexities at the bases of the apices, the apices narrowly triangular, acute, 4.5 mm long; **petals** elliptical, acute, 3 mm long, 1.25 mm wide, slightly constricted above the thickened base; **lip** purple, ovate, subacute, 3 mm long, 2 mm wide, the margins deeply denticulate above the middle, the disc with a pair of tall, lacerate lamellae above the middle, the base truncate, minutely bilobulate; **column** semiterete, slender, broadly winged above the middle, 5 mm long, the foot 1.5 mm long.

ECUADOR: **Tungurahua**: Cerro Abitagua, alt. 1950 m, 8 June 1998, *L. Jost 1044* (Holotype: MO), C. Luer illustr. 18931.

Although similar in many respects to *S. odontochilum*, this species is distinguished by long, narrowly triangular apices of the lateral sepals with merely a pair of indistinct convexities on the lamina of the lateral sepals. The diagnostic cushions of the lateral sepals of *Scaphosepalum* are poorly developed in several species (*S. cimex, S. clavellatum*, many specimens of *S. microdactylum*, and *S. odontochilum*), but in none so faintly developed as in this species. Were it not for the similarities of the vegetative and floral parts to *S. odontochilum*, the genus would be difficult to separate from *Pleurothallis*.

Scaphosepalum martineae Luer, sp. nov.

Ety.: Named in honor of Martine Cloes of Hasselt, Belgium, co-collector of this species.

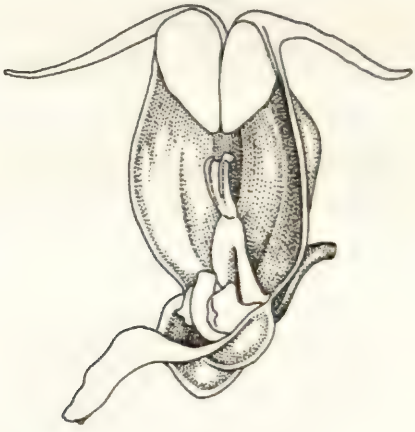
Species haec *S. breve* (Rchb.f.) Rolfe affinis, sed ovario densissime scabroso, caudis verrucosis, labello profunde pandurato cum hypochilio late subquadrato et epichilio rotundo profunde denticulato differt.

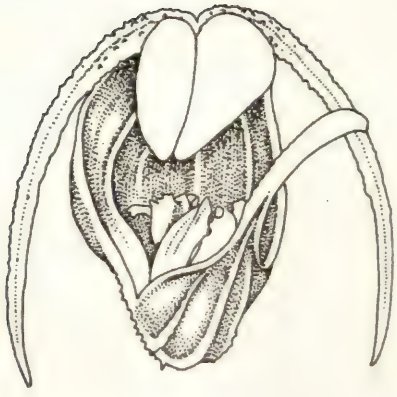
Plant small to medium in size, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 2-2.5 cm long, enclosed by 2-3 tubular sheaths. **Leaf** erect, coriaceous, 10-15 cm long including a petiole ca. 3 cm long, the blade elliptical, acute, 2-2.5 cm wide, gradually narrowed below into the slender petiole. **Inflorescence** a distichous, slightly flexuous, successively many-flowered raceme, loosely flowered below becoming more congested above, up to 8 cm long, borne by a slender, rigid, roughly scabrous peduncle, 8-10 cm long, from low on the ramicaul; floral bracts obtuse, 3 mm long; pedicels scabrous, 4-5 mm long; ovary densely scabrous-verrucose, 3.5 mm long; **sepals** orange-brown, carinate-denticulate, microscopically ciliate, the middle sepal ascending, ovate and concave below, 13 mm long, 5 mm wide,

connate to the lateral sepals for 1.5 mm, contracted into a thick, ascending tail, 7-8 mm long, 1.2 mm wide toward the apex, the lateral sepals connate 10 mm into an oblong, concave lamina 11 mm long, 8 mm wide, the cushions obtusely triangular, 5.5 mm long, 3 mm wide, the tails decurved, slender, verrucose, 14 mm long; **petals** yellow, elliptical, oblique, 4 mm long, 1.8 mm wide, with the apex rounded, the margin undulate above, dilated below; **lip** deeply pandurate, reflexed near the middle, 3.5 mm long, 2 mm wide, the epichile above the isthmus rounded, deeply denticulate, the isthmus 0.5 mm wide, the hypochile subquadrate, with a parallel pair of denticulate crests, the base broadly truncate, minutely bilobulate; **column** semiterete, broadly winged, 4 mm long, with a thick foot 2.5 mm long.

PERU: **Amazonas**: Divisioria, collected by Martine and Patrick Cloes, flowered in cultivation at Hasselt, Belgium, July 1998, *P. Cloes & M. Cloes s.n.* (Holotype: MO), C. Luer illustr. 18885.

This species with a slender, coarsely scabrous peduncle is related to the frequent and variable *S. breve*. It is distinguished from all the variations of the latter by a densely scabrous-verrucose ovary; unspotted sepals with verrucose tails of the lateral sepals; a deeply denticulate, rounded epichile of the lip with a membranous, broadly subquadrate hypochile, and an extremely narrow isthmus.





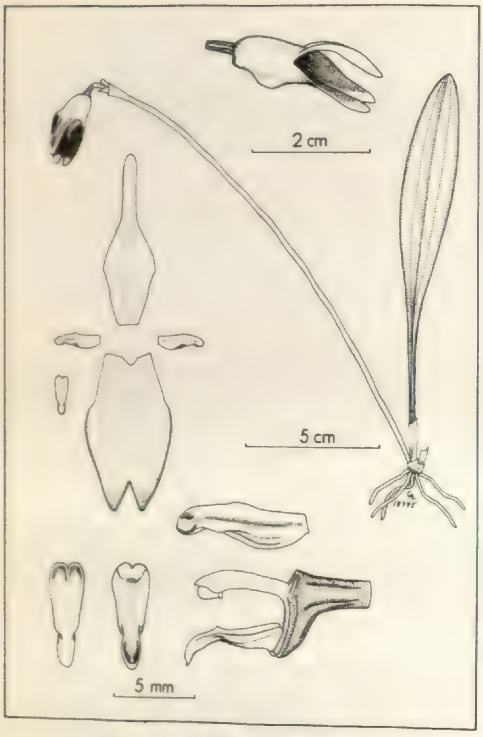


Fig. 1. Masdevallia adrianiae

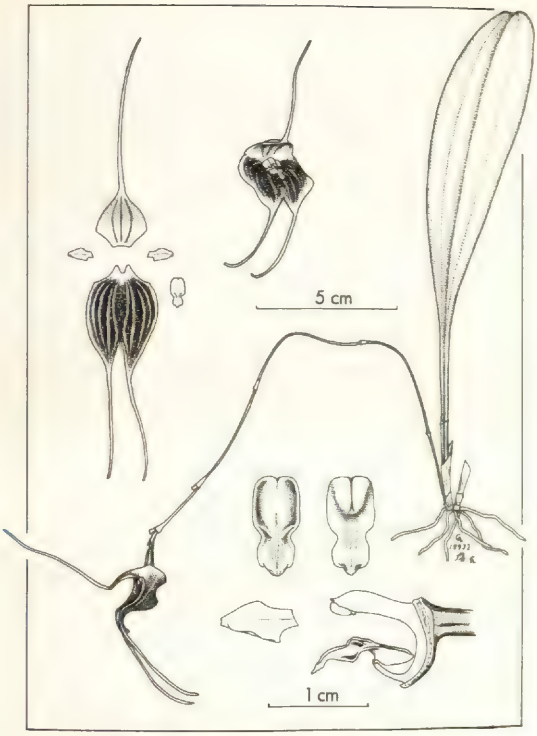


Fig. 2. Masdevallia maduroi

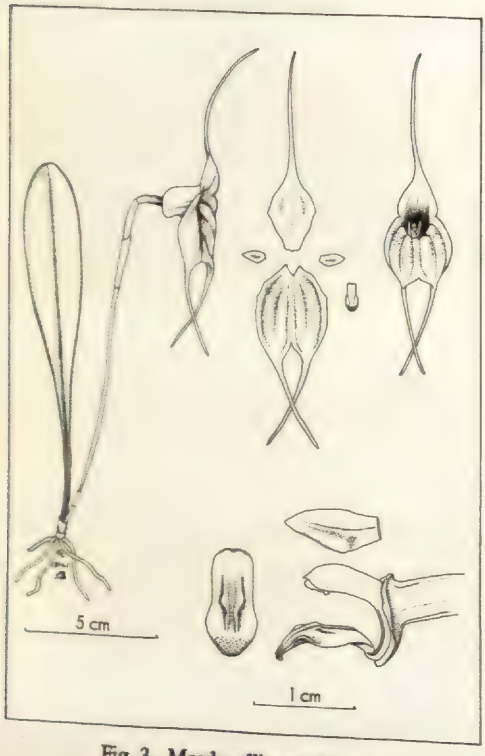


Fig. 3. Masdevallia monicana

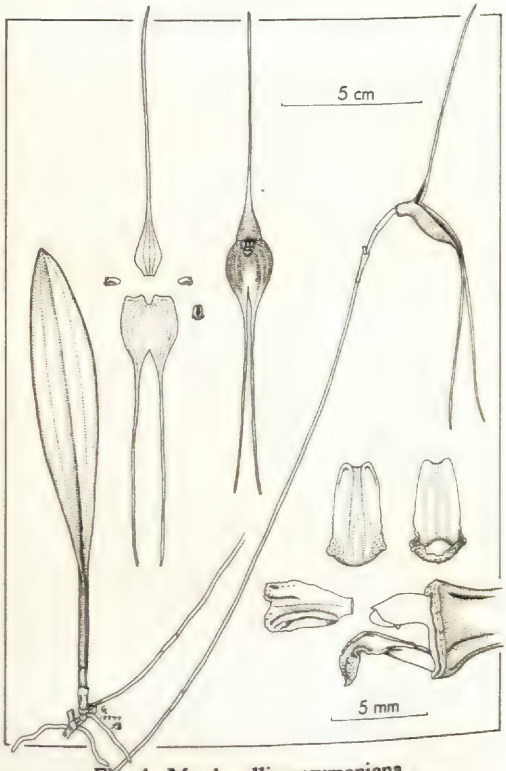


Fig. 4. Masdevallia newmaniana

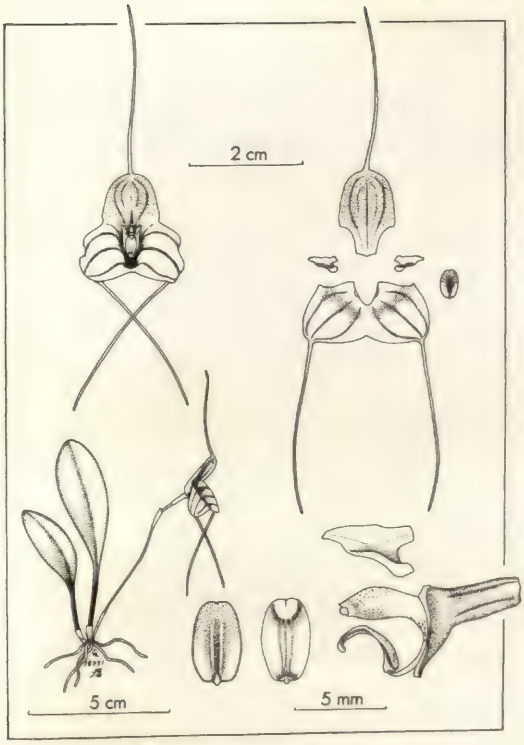


Fig. 5. Masdevallia polychroma

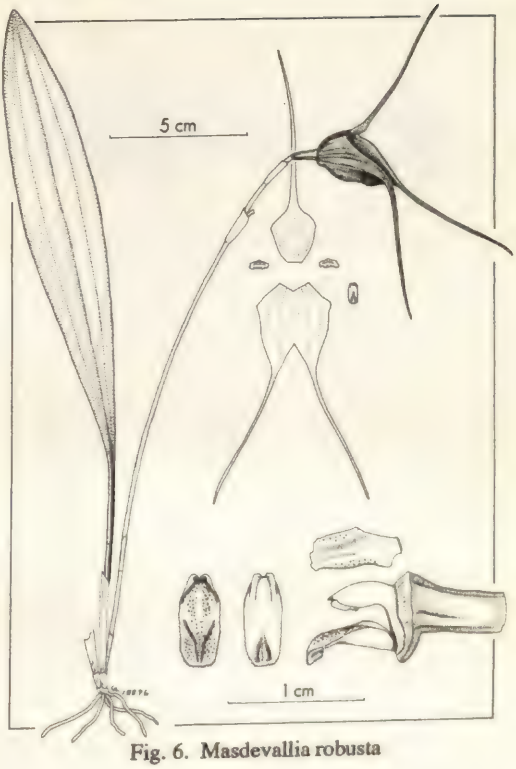


Fig. 6. Masdevallia robusta

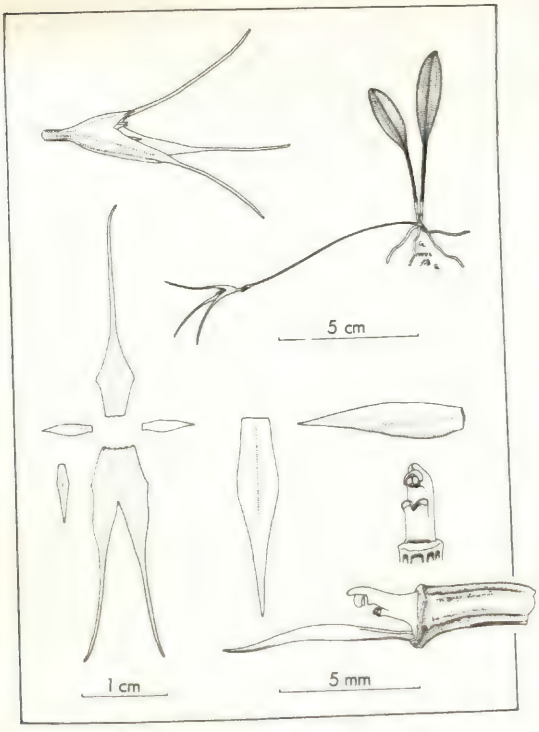


Fig. 7. Masdevallia schizostigma

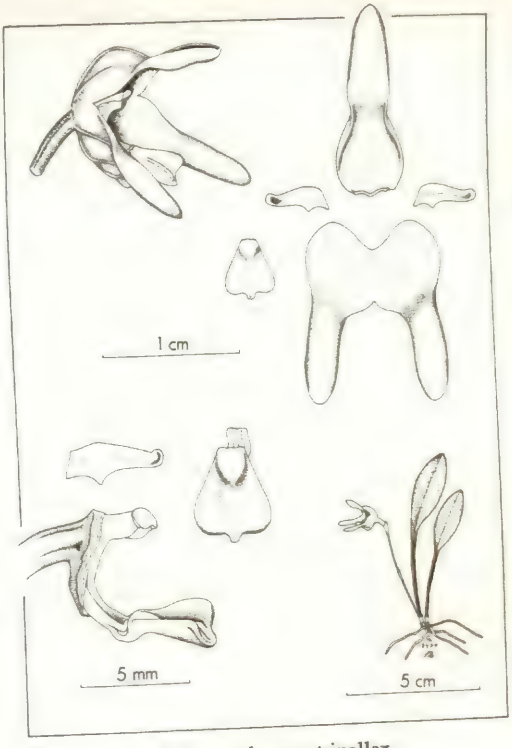


Fig. 8. Porroglossum tripollex

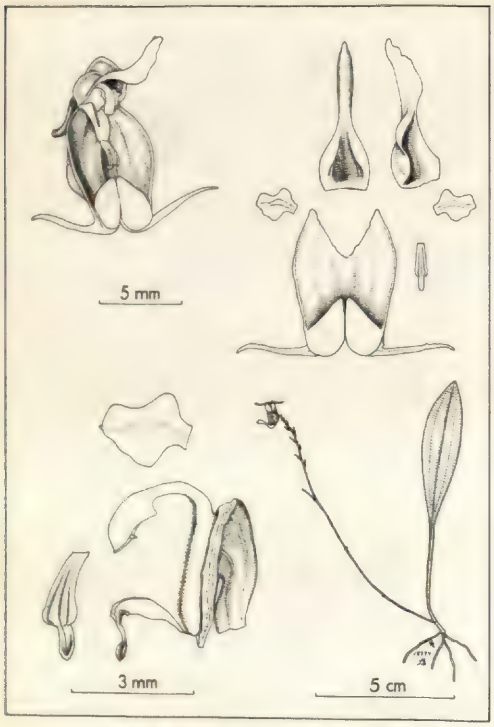


Fig. 9. Scaphosepalum cloesii

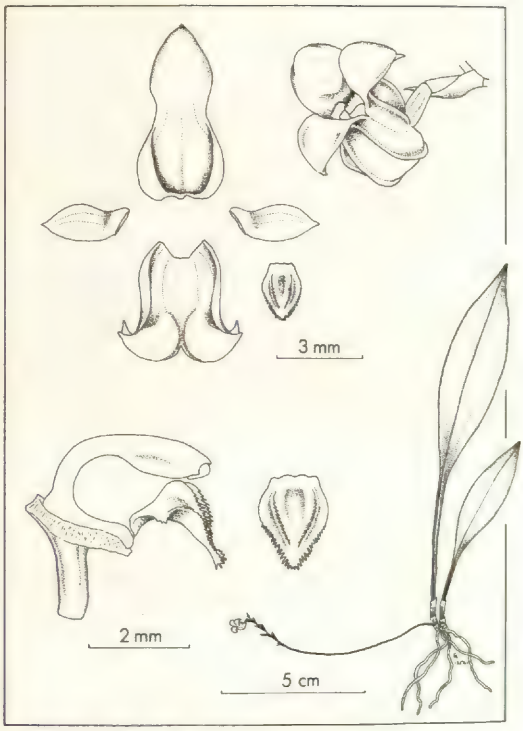


Fig. 10. Scaphosepalum globosum

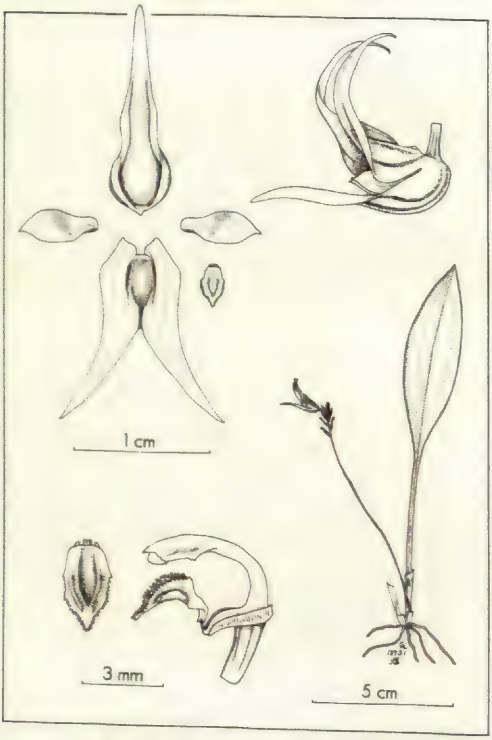


Fig. 11. Scaphosepalum jostii

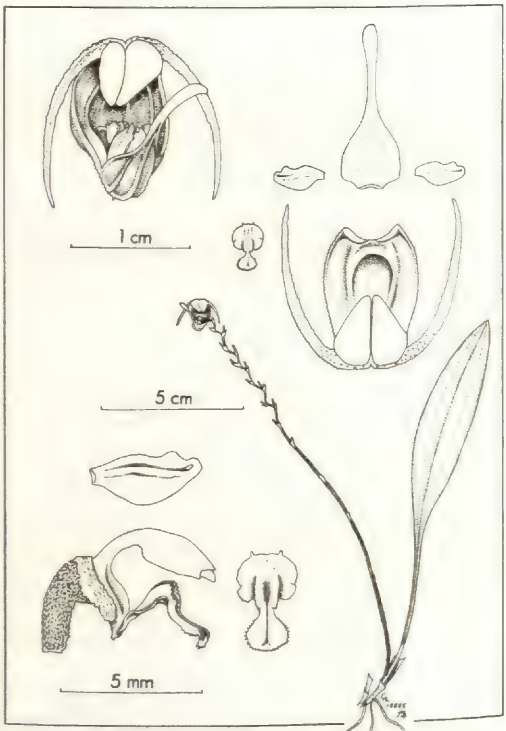


Fig. 12. Scaphosepalum martineae

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CORRIGENDUM

Due to an oversight, the word 'Holotype' was omitted from the citation of the holotype for *Trichosalpinx patula* Luer, *Icones Pleurothallidinarum-XV*, Monogr. Syst. Bot. 64: 31, 1997. The citation should read:

ECUADOR: Prov. of Zamora-Chinchipe: east of the pass east of Loja, alt. 2250 m, 22 May 1988, *C. Luer, J. Luer, A. Hirtz, W. Flores, A. Andreetta & W. Teague 13595* (Holotype: MO).

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